

# MARINE RECORD

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## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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## ARMOR PLATES.

For each of the battleships Illinois, Alabama and Wisconsin, about 2,590 tons of armor will be required under an estimate made by the Naval Ordnance Bureau. It is not proposed to reduce the weight of armor on these ships as compared to former battleships, but to make a wider distribution of it. The weight of the armor alone will be about 23 per cent. of the total displacement, and it is claimed by ordnance experts that fully as effective protection will be afforded these ships as any of their class heretofore built for the American Navy and that the thickness of the casemate armor will be increased to seven inches or an inch and a half thicker than that on the Kearsarge type. While an 8-inch Krupp plate is considered to afford protection equal to that of a 10-inch Harvey plate, it is asserted by Naval Ordnance officers that it would not be at all practicable to reduce the thickness of the lighter armor plate, in the same proportion, this now being on ships of the Alabama class only 5½ inches. The usual course when ships are designed is to allow a certain proportion of their weight to armor. This proportion, it is said, might be considered unwise to change, and it would be better perhaps to utilize the weight saved by the use of Krupp armor instead of the Harvey in thickening the lighter casemate plates and thus affording the broadside guns and those that may be on the main and berth decks, complete protection from 6 and 8-inch projectiles at all ranges from which engagements will probably take place.

## BRAKE FOR VESSELS.

Mr. H. Albert Johnson, United States consul at Venice reports interesting experiments made with a marine brake. The experiments were for the purpose of testing the efficiency of an invention of a Hungarian engineer for stopping vessels under full steam. The device is a sort of parachute of spring steel plates, which, when out of use, fit into one another and hang above water. For the first trial the apparatus was attached to the stern of the vessel. When the maximum speed of 9 miles per hour, Austrian reckoning, was attained, the brake was released and dropped into the water, stopping the vessel with almost imperceptible shock in a distance of 30 feet. Had the supports not yielded to the strain it is likely there would have been considerable shock. A trial was made without the brake and a stop was made in 900 feet, after shutting off the engines at full speed. Another trial, that of reversing the engines from full speed ahead to full speed astern, stopped the vessel in 180 feet. After being strengthened, the brake was again given a trial and stopped the vessel almost instantly. The consul remarks that while these results will hardly be considered valid for the powerful ocean liners, with which the necessity for a quick stop is occasionally so crucial, that they indicate that an important principle has been introduced among marine safeguards.

## WIRELESS TELEGRAPHY.

The Institution of Electrical Engineers (of England) was recently favored with a paper on wireless telegraphy by Signor Marconi, in which the eminent scientist stated that the success of experiments in wireless telegraphy must largely depend upon the height of the vertical conductor. For the purpose of illustration Mr. Marconi stated that with a conductor 80 ft. high signals can be conveyed over a distance of 18 miles, while 114 ft. is considered sufficient height for communicating over a distance of 32 miles.

It is reported that the United States War Department is arranging to make a test of the Marconi system. The two experimental stations selected are the roof of the State, War and Navy Building and Fort Myer, across the Potomac, the distance being 6 miles. The government has purchased the necessary instruments and the experiments will be conducted by Col. James Allen and Lieut. Geo. O. Squire,

## FIREPROOF WOOD.

The present system of fireproofing wood used on ships in the Navy is declared by a board of experts to be unequalled, and it is recommended that no change be made or any other method considered by the Department. This board has for eight months investigated the whole subject of various processes for rendering wood impervious to fire and to discover if practicable the very best system of treating all woodwork that may be necessary to place in the vessels now building for the Navy. The board was the result of Colonel Roosevelt's efforts when Assistant Secretary of the Navy, to have experts take up the fireproof wood subject in view of the opposition that was developed against subjecting wood to any fireproof treatment. It was held by some experts that some fireproof wood was as dangerous to life in battle as that not so treated, but the majority of officers, including Admiral Sampson, Admiral Hichborn and several of the bureau chiefs were warm advocates of the wood. The board examined every known process and concludes that the electric process now used by the navy is far superior to all others, and that not an inch of wood should be placed in a war vessel that is not treated by it. The sea fights in the Spanish war added nothing to the lessons derived from the Yalu fight respecting the danger of woodwork on warships. The results produced by the woodwork of the Spanish vessels taking fire both in front of Santiago and during the Manila battle was reported upon by the naval officers present and a conclusion reached that many lives were lost from this cause. The board's report has received the approval of the Navy Department, which directs that in the construction of new ships all woodwork be treated by the present electric process.

## PHOTOGRAPHY OF SOUND WAVES.

Professor Wood, of Madison University, Wisconsin, has succeeded in making photographs of waves of sound in air. The sound wave is the crack of an electric spark, and it is illuminated and photographed by means of the light of a second spark, which flashes between two magnesium wires at some distance behind the first, and at an interval of about one-thousandth of a second after the first spark. The sound wave is thus caught before it has gotten out of the field of the instrument, although moving with a velocity of 1,000 feet a second. The wave appears as a thin circle of shadow with a light border, being simply a sectional view of the rapidly diverging spherical shell of condensed air constituting the sound wave. By placing a glass plate near the point where the wave starts, the reflected wave or echo, has been photographed which appears as a circle with equal but opposite curvature. These waves were observed by Topler, a German physician, a number of years ago, but they have never been photographed before.

## ABSOLUTE ZERO.

The experiments which have resulted in the liquefaction of air seem likely to revolutionize our ideas of heat and cold. Mr. Chas. E. Tripler, of New York, is turning out liquefied air by the gallon, and a description of his achievements in the April Century is a veritable fairy-tale of science. Fancy a kettle of liquefied air going off in steam when set upon a block of ice, because the latter is several hundred degrees warmer than the air! It may not be long before the expression "as cold as ice" will cease to be heard, and "as hot as ice" adopted.

It certainly is surprising to see the liquid air poured upon ice fly off hissing like water from hot iron; but, when one reflects that the ice is 344° hotter than the liquid, it does not seem so strange; or to see one's breath, blown into the open can of the liquid, sent back instantly, its moisture congealed into a miniature snow storm. A jet of steam is frozen as quickly, for steam in the open air is only 114° hotter than the breath, while from the temperature of steam to that of liquid air is a terrible drop of 524°! In this freezing effect probably is found the greatest obstacle to the use of liquid air as a motive power. The moisture of the air is deposited rapidly as ice upon the machine, especially round the orifice from which the jet of extremely cold air emerges. This soon closes the orifice completely and stops the machine.

Another surprise is given when the experimenter puts his hand directly into the liquid for a moment. But the sensation is only as of a soft cushion of air about the hand. Such it really is. The heat of the hand forms a layer of vapor or air about the hand, and the liquid air does not come in contact with the flesh. Should the liquid actually touch the flesh, a severe injury like a burn results, which sometimes is months in healing. In a few seconds an egg is frozen so that it requires a hard blow of a hammer to break it. Probably its germ of life is extinct. Seeds of grains and vegetables have been tested in liquid air. These were all natives of the temperate zone, the seeds of which will pass the winter in frozen earth without loss of vitality, such as barley and oats for grains, and peas, cucumber and squash for vegetables. They are kept for 110 hours at 312° below zero, and then slowly thawed for 50 hours. After this treatment they were still alive. On being planted they germinated and grew.

The liquid air boils in a dish till it has cooled the dish to its own temperature. Its boiling point is 312° below zero. After this the vapor of air which covers the liquid so retards evaporation that it may be kept eight or ten hours in a can packed only in felt. It has in this way been carried 250 miles from the place of manufacture. The cooling effect upon the air in the room is very marked. The writer gave two lectures in one afternoon with liquid air. Said a lady of the second audience, as she entered the lecture room: "How cold your room is!" The temperature had been lowered 10° or 12° by the evaporation of the air used in the first lecture.

All other liquids are frozen when put into liquid air. Mercury becomes like iron, so that it will drive a nail, hold up a weight, or serve any other purpose as a metal, so long as it is kept frozen. Absolute alcohol soon becomes solid. A tube of liquid air dipped into a glass of water rapidly converts the water into ice. By removing the ice from the glass and the tube from the ice, there remains a dish of ice into which liquid oxygen may be poured. A steel pen tipped with a match, or an electric-light carbon red-hot at its tip, will burn in this with intense heat and light. Between the liquid oxygen and the burning steel are about 3,300°, and yet the ice-tumbler is not affected. Of course the oxygen is turned into a gas before combustion begins. Liquid oxygen cannot support combustion.



## NEWS AROUND THE LAKES.

## CHICAGO.

*Special Correspondence to The Marine Record.*

The Goodrich Transportation Co. have now a first-class ship and engine building plant at Manitowoc and solicits the patronage of Lake Michigan traders.

Owing to the near approach of the opening of navigation, grain shippers refused to pay 3 cents on corn to Buffalo, and some line tonnage which is on the market remains unplaced.

The Chicago office of the Magnolia Metal Co., sole owners and manufacturers of Magnolia metal, has been removed from the Traders' Building to the Fisher Building, 281 Dearborn street.

Chicago elevator men returning from Buffalo think that the elevator pool at that port has been perfected, except the final signing of papers. This will be done within a day or two and the season will begin with the pool in actual operation.

The sale of the steamers Crescent City, Zenith City, Empire City, Queen City and Superior City by the Zenith Transit Co. to the American Steel & Wire Co. has been confirmed by J. S. Keefe, general traffic manager of the American Steel & Wire Co.

C. J. Fennesen, a veteran lake captain, committed suicide at Chicago Saturday by taking carbolic acid. Mr. Fennesen was sixty-seven years old and a native of Sweden. During the administration of Mayor Swift he had charge of the Chicago avenue crib. Recently, owing to advanced age, he had been unable to work, and despondency caused him to end his life. He leaves a widow in Sweden.

Work began this week in modernizing the old plant of the Calumet Iron & Steel Co. at Irondale by a new South Chicago Furnace Co. The new plant is to have a capacity of 90,000 tons of pig iron and will be in active operation by June 15th. It will employ 1,000 men. W. L. Brown is president of the new company. The plant has not been operated for several years. Contracts for ore and vessels to carry it are now being made.

The following vessel transfers have been recorded at the Grand Haven custom house: Steamer N. McGraft, one-half interest sold by William E. Parsons to Ed. Hunter of Muskegon, consideration \$400; schooner E. Scoville, sold by S. Brensten of Milwaukee to Mrs. Lucy Rath of Ludington; consideration \$700; steamer Elva, one-half interest sold by J. F. Keightley of St. Ignace to George D. Arnold of Mackinaw, consideration \$3,000; steamer Eleanor, sold by Hosea W. Rogers of Saugatuck to Leonard A. Robinson of Montague, consideration \$1,600; steamer M. & M., sold by D. H. Leahy et al. of Two Rivers, Wis., to F. A. Sears of Saugatuck, consideration \$1,700; schooner J. L. Higgin, sold by James M. Thompson et al. of Charlevoix to G. C. Gerkin, consideration \$900.

The sale of the five big steamers of the Zenith Transportation Co. to the American Steel & Wire Co. was closed here on Tuesday. All the stock of the Transportation company was purchased by the American Steel Co. at a figure considerably above par. Gross amount paid will exceed \$1,200,000. This purchase gives the American Steel Co. a fleet of 13 carriers of the largest class. The boats will probably be handled from Cleveland, although affairs of the old Zenith company will continue to be handled from Duluth, the home port. A. B. Wolvin, of Duluth, who organized the Zenith company, and has since managed the fleet, will probably go to the Pacific coast and look after the transportation concerns of J. J. Hill, president of the Great Northern railroad.

The Youghiogeny & Lehigh Coal Co., whose general offices are at St. Paul, Minn., and Chicago offices, New Stock Exchange Bldg., with covered docks at Duluth, West Superior, Milwaukee and Chicago, and shipping wharves at Cleveland, Fairport and Erie, is but five years old and yet it is one of the most progressive and successful coal concerns in the western states. Having recently acquired the business and property of the O. S. Richardson Fueling Co. by purchase, its docks at the entrance to Chicago harbor are now the largest on the whole chain of lakes, having a water frontage of 1,400 feet. These docks are equipped with ten McMyler derricks and two floating derricks, with a capacity of 500 tons. The storage capacity of the docks is 200,000 tons of bituminous coal. The principal stockholders in the "Y & L." are prominent coal men in Pittsburgh and producers and shippers of the best grades of Youghiogeny and Pittsburgh gas and bituminous coal. These docks are admirably situated for supplying the steam trade of Chicago, railroads, manufacturers, gas companies, large institutions, etc. Having direct communication with the Chicago, Milwaukee & St. Paul and the Chicago & Northwestern railroads, they are the only bituminous docks here which can reach all points west and northwest. This company has also a large wholesale anthracite coal business, shipping from its covered docks and sheds on the north branch of the Chicago river. Manager John T. Connery has entire charge of the business in Chicago, and under his efficient management the business has greatly expanded during the past five years.

W. E. CHRYSLER & Co., proprietors Steam Ferry Line, Harbor Springs, Mich., writes the RECORD as follows: The steamer Adrienne is now in the yards receiving a thorough rebuild, lengthened and widened. Will come out as good as new. Crew not yet engaged. Do not look for navigation in Little Traverse Bay before May 10th. Ice about thirty-six inches thick.

## BUFFALO.

*Special Correspondence to The Marine Record.*

The wooden steamer John F. Eddy has been chartered for the season for \$10,000 net.

Capt. James H. Todd, formerly in command of the Lehigh Valley liner Saranac, has been appointed local inspector of hulls at this port.

Erie canal men have renewed their effort to regulate transportation and storage charges on grain by the same bills that were introduced last session. Senator Foley has charge of the measures. One bill provides that charges shall not exceed 50 cents per 1,000 bushels for elevating grain, ½ cent per bushel for hoisting apparatus, and ¼ cent per bushel for storage for the first ten days, with 1-10 cent additional for each succeeding ten days or part thereof. The companion bill appropriates \$500,000 for the purchase of elevators—three at Buffalo and three at New York—to be under the management of the Superintendent of Public Works.

The steamer Wyoming of the Mills combination will not be in the Lackawanna line this season, but has been chartered to Bottsford, of Port Huron and will take the place of the Colorado in the line from that port and Washburn. The Lackawanna Green Bay line will be composed of the Cuba and Russia, as last season. It is expected that the Lackawanna line proper to Chicago will be composed of the line's two steamers, Lackawanna and Scranton, with the Gould, America and Brazil, though the charter is not complete yet. The western line will run the Gratwick and Gilbert as before. These are all the line charters reported to date.

The Dominion trade and navigation returns for the fiscal year ended June 30, 1898, and just published, show the aggregate trade of Canada with the outside world to have been \$304,475,736, of which \$164,152,683 were exports and \$140,323,053 imports. The aggregate trade for the previous year was \$257,168,862, the increase being \$47,306,000. The trade with Great Britain advanced from \$106,639,000 in 1897 to \$137,499,000 in 1898, and that with the United States from \$111,022,000 in 1897 to \$134,410,000 in 1898. Of Canada's exports Great Britain took \$104,998,000 and the United States \$45,705,000; of the imports \$32,500,000 were from Great Britain, and \$78,705,000 were from the United States.

The lake line managers are in New York holding meetings with the trunk line managers over the fixing of spring rates. It is reported that there is danger of the all-rail lines taking all the flour again this spring on a cut rate, and the lake lines are trying to hold them to their agreed rate, which has been maintained so far. If this is not adhered to it is said that the lake lines will insist on their old differential of five cents on flour, though last season they accepted three cents and got very much the worst of it for a great part of the season. The winter has been much more unsatisfactory to the flour shippers here who obtained their supplies from Minneapolis, for the roads are so poorly equipped and there have been so many blockades of the cross-lake business that it has been a complete gamble to reckon on the arrival of any consignment.

Marine engineers are very much against submitting to the proposed amendment to the city charter which will require them to take an examination in order to procure a stationary engineer's license. A delegation of them appeared before the Aldermanic Committee on Ordinances this week, in an effort to have that body report against the provisions of the bill now before the Legislature in Albany. The question has been reported favorably by the Charter Revision Committee. The main objection to the measure is because of the fact that heretofore a marine engineer has been exempt from taking out a stationary engineer's license, and they think it unjust at this time to compel a man who holds chief engineer's license issued by the government, and has had several years' experience, to be compelled to try an examination to obtain a position as a stationary engineer, and perhaps be relegated a class below that which he already holds by reason of his competency. George Uhler, of New York, president of the National Association of Marine Engineers, headed the delegation of marine engineers and acted as spokesman. He said that there was no objection to paying the fee for a stationary engineer's license, if that was all there was to it. But he thought that there must be some good cause shown why the change was asked for, before the committee made a favorable report in the matter.

BOATS of the Davidson fleet now hail from Duluth. They were enrolled in the customs office Tuesday. The fleet includes twenty-six vessels, with an aggregate tonnage of 60,000. Under the law passed by the Minnesota state legislature four years ago vessels hailing from a port in the state of Minnesota were to be taxed on a basis of 3 cents per net ton and there was to be no other taxation. A great many vessels have been enrolled at the Duluth customs office as a direct result of the operation of this law, for it is considered the most favorable enrollment law on the entire chain of lakes. The opposition to the law at the time of its consideration in the legislature was aroused because the tax was only nominal. Had it been equal to the tax enacted by other states it is likely not a single vessel would have been enrolled from Duluth under its operation. As it is many of the lake fleets are looking to Duluth as a port of hail. It is said that one of the next fleets to embrace the advantages offered in the Minnesota law will be the Dunham boats at Chicago. Under the working of the law St. Louis county profits in no mean way by this vessel taxation. The tax from the Davidson fleet alone will be about \$1,800 a year and the Duluth county gets one-half the amount.

## DETROIT.

*Special Correspondence to The Marine Record.*

An agent of the Tonawanda Iron & Steel Co. was in Detroit Monday, trying to buy the schooner J. H. Rutter.

The D. & C. Line steamers will begin making daily trips April 1st, there is no ice between this port and Cleveland.

Thirteen cars of material to be used in the two big steamers for the Eddy and McMillan syndicates arrived at the Wyandotte yards this week.

The sidewheel steamer Pennsylvania, which is being rebuilt and equipped at the Detroit dry dock, will be completed May 15. She is to run between Erie and Buffalo.

The keel of the new side-wheel steamer for the new White Star line was laid at the Wyandotte yard of the Detroit Dry Dock Co. Monday morning. The company expect to have her in operation next season.

The car ferry company which failed on the Detroit-Sandusky route, has been reorganized by a syndicate known as the Detroit, Sandusky & Canada Car Ferry Co. They have bought the small barge Mikado to begin work with. E. H. Moreton, promoter and manager of the old company, says he is not in this.

Keeper John D. Persons, of the Thunder Bay Island life-saving station, writes as follows, under date of March 25: "People are asking me over the line when I think navigation will open. I am a little mixed on that subject at present myself. A year ago the 21st of March I went to Alpena in a sail boat; on the 24th the light on this island was lighted, and on the same day the Pilgrim arrived in Alpena. To-day you could drive a team from the station door to Alpena over two feet of solid ice, and on the outside of the island it is shoved up 15 to 20 feet high, and the snow is drifted from 6 to 8 feet deep."

The freight market is in practically the same condition it was a week ago and the indications are that very little more chartering will be done until the season opens. There is a good demand for tonnage all around, but the rates offered do not suit vesselmen. Ore shippers are practically out of the market. They were figuring on getting new tonnage when season contracts on coal were made, and it looks as if they would be disappointed in that, as coal shippers say they will not pay the rates asked by vesselmen, and will ship their coal by wild boats, and, as the vesselmen will not come down a peg in their charter figures, the ore men will have to depend on wild tonnage to move the ore that has not been covered, although it is fully understood that arrangements have been made for the carriage of nearly all the ore that will be transported over the lake next season.

This week will see the dredging outfit of J. Sullivan at work on the completion of his contract with the United States government for the deepening and widening of the Detroit river channel from Ballard's Reef off Grosse Isle to the Lime Kiln Crossing, just above Amherstburg. This work was begun last season and \$125,000 was expended. The object sought for is to make a uniform depth of twenty-one feet by a width of 600 feet. One-half the channel, or 300 feet was completed last year, and a further amount of \$100,000 will be required this year to complete the contract. The portion of the channel improved last year was the east half, about 1,200 feet long, and is almost wholly within Canadian waters. There is also in contemplation the appropriation of \$600,000 for the extension of the improvements to the mouth of the river. This stretch of water is known as the Lime Kiln Crossing and for years has been a menace to navigation. Hundreds of thousands of dollars have been spent in the past fifteen years by the United States Government in improving this channel.

If there is any one department of the Detroit postal service that Postmaster Dickerson takes more interest in than another it is the service on the Detroit river. When the season ended last fall at the close of navigation, and the mail boat Florence B. was taken into dry dock, it was found that she was in a dilapidated condition, owing to the very severe work she had to perform, day and night, through all kinds of weather. Nearly every frame was broken and she was practically used up. It was apparent to the postmaster that either a new boat or extensive repairs on the Florence B. would have to be ordered before the service could be continued this season under the contract which had been so successfully performed heretofore, and he so reported to the department. The matter having been brought to the attention of the present contractor, Mr. Chas. F. Bielman, the latter declined to undertake the extensive repairs ordered by the department in consideration of receiving only a yearly contract. Upon receiving Mr. Bielman's ultimatum the department requested him to make them a proposition for performing the service for a period of four years, with the understanding that he was to make the repairs demanded and guarantee a speed equal to all requirements. While this involved the practical rebuilding of the Florence B., her equipment with new boiler, overhauling the engine, the construction of mailing cases, etc., Mr. Bielman submitted his proposition and the postmaster was speedily advised of its acceptance and directed to make the contract. As the reconstruction of the Florence B. is now well under way, the marine interests, which have come to look upon this service as indispensable, are assured of a continuance of free delivery for the next four years with, if possible, greater efficiency than heretofore. New and larger quarters for the marine station have been secured at the foot of First street and will be fully equipped for every requirement of the service, which will be resumed upon the opening of navigation.



## PORT HURON.

*Special Correspondence to The Marine Record.*

The tug Runnels is being fitted out in Black river.

Capt. Fleck will leave for Tonawanda on Monday next to fit out the Pawnee.

The steamer Promise will leave Detroit for the Flats on Sunday morning.

Capt. J. D. Baker, of Fort street, is raising the machinery from a sunken steamer at Amherstburg.

D. Robeson is once more occupying his store on Butler street. Many improvements have been made to the building since the fire.

Thirty vessel transfers have taken place in the Huron district during the past winter. In many instances only a small interest has been sold.

Capt. Kimball, of the light-house, reports that Lake Huron is filled with ice as far as the eye can reach. He predicts a late opening of navigation.

St. Clair river is now blocked with ice to a point above Marine City. The steamer Mary has only been able to reach Recor's point for several days past.

The work of fitting out a large number of boats in Port Huron has begun. There are fully one-third less boats laid up at this port this year than there were last.

Capt. Frank Hebner and family, who have resided in Chicago for several years past, are guests at the Union hotel. They will again take up their residence on Court street.

Henry Burton has returned from Duluth, where he is engaged with the Inman Towing Association. He will remain at home until the season of navigation opens when he will again assume his duties at Duluth.

Fred Lackie, who was mate on the steamer Brazil, last spring, in the army on the island of Porto Rico. He writes home that he is dead sick of army life. He says a deckhand on a lake steamer is a king to it.

A meeting of the marine engineers was held on Wednesday evening. At the close of the meeting the members were agreeably surprised by the appearance of their wives who brought refreshments with them. Cards followed the refreshments.

Ice, ice, nothing but ice at this end of Lake Huron, and solid. There is not much of a rush to get the boats fitted out for the reason that every one looks for a late opening. The steamer Mary only gets down the river as far as Recor's point. The river is blocked with ice up to there.

The big freighter Wyoming has taken her last load on the Lackawanna line. The Wyoming will be run during the coming season as a freighter on the line between Port Huron and Duluth. The three steamers which will represent the Lackawanna line next summer are the Cuba, the Russia and the Brazil.

Capt. Rex, who has the contract for the removal of the wreck of the City of Duluth at the mouth of St. Joseph harbor, has had the time extended by the government for the completion of the job to the 10th of next month. Anything like good weather will enable him to complete the work by the date mentioned.

The common council, at its meeting Monday evening, adopted resolutions submitting to the voters of Port Huron at the April election the question of the construction of a canal from Lake Huron to Black river. This is a project of the greatest importance to Port Huron, and should be carefully considered by every citizen.

Capt. W. W. Stewart, the appointee for Inspector of Hulls, District of Port Huron, was born on Harsen's Isle, St. Clair county, Mich., July 20, 1848. His father died when he was but seven years old. He was obliged to leave home at the age of eleven, and he then got employment on a farm at Greenbush, Marion county, O., where he worked until he was 15 years old, when he enlisted in the 73d Indiana Infantry, Company K. When he got to Nashville, Tenn., he was detailed as messenger on the Nashville & Chattanooga R. R., which was operated by the government. He was honorably discharged January 15, 1864, by request of his mother, he being only 16 years of age. He went to Detroit, Mich., shipped as deckhand on the steamer I. W. Masters, where he served two months, then shipped as cook on the schooner Emmo, with Capt. Hemmenger. In 1865, he shipped before the mast with Capt. R. H. White, of Detroit, on the barque Chicago Board of Trade, was afterwards in several sailing vessels, the H. C. Winslow, City of the Straits and schooner R. C. Crawford, in 1869 got his first license and went mate of the Sweepstakes, with Capt. Hiram Ames, of Harsen's Isle. In 1873 he was appointed master of Kate Moffat, which position he held four years. He has been master of either sail or steam vessels ever since, and has sailed some good steamers, among which were the steamers Dean Richmond, Kittie M. Forbes, Kalkaska, Samoa and Ionian, and which he would have sailed again the coming season, had he not been appointed inspector. Capt. Stewart now has 22 issues of first-class United States licenses as master and pilot between Ogdensburg, Chicago and Duluth, and waters connecting. He is a genial, painstaking gentleman, and his appointment gives satisfaction to all good citizens. The captain is a Mason and a Maccabee. He will assume the duties of his office March 27. He was appointed by the Secretary of the Treasury, on the recommendation of Senator McMillan, he took the Civil Service examination and was at the head of the list, with a general average of 96.78.

## CLEVELAND.

*Special Correspondence to The Marine Record.*

The Detroit & Cleveland line started their steamers this week.

It is rumored that the Minnesota Steamship Co. will place a couple of tugs at Lorain this summer so as to do their own river and harbor towing.

Many friends of Mr. W. M. Fitch, secretary of the Cleveland Ship Building Co., will be sorry to learn that he met with a serious street car accident on Wednesday.

The Otis Steel Company will advance the wages of about 600 of their employes 5 per cent. commencing May 1st. The increase is a voluntary one on the part of the company.

The new steel steamer Texas, recently bought from A. W. Wolvin by the Federal Steel Co., and known in the yards as No. 34, is now expected to be launched from the Lorain yards of the Cleveland Ship Building Co. at an early date.

A number of boats cleared this week after stone. The steamer Nellie Torrent loaded 400 tons of coal from Donaldson & Co. to Blood & Hart, of Marine City, Mich. The Aberson went to Kelley's Island light, as did also the steamer H. B. Tuttle and the A. Y. Gowan, all of them being after stone.

Mr. J. C. Gilchrist, this week sold the steamer Quito to Mr. W. A. Rogers, of the Tonawanda Iron & Steel Co. The price was not named. The Quito is a wooden boat suitable for the Tonawanda trade. Other vessels are being inspected for the Tonawanda people and more vessel property will probably change hands before the close of the week.

The Cleveland City Forge & Iron Co. received the contract for the forged rudder frame for the battleship Maine, which is building at Cramp's yards. The forging will weigh about 45,000 lbs. The order for the forged rudder frame for the battleship Ohio, which is being built by the Union Iron Works, San Francisco, was also given to the Cleveland City Forge & Iron Co. This piece will weigh about 33,000 lbs.

The Globe Iron Works Co. will in a few days lay the keel of the new steel steamer that is to be built for the Cleveland Steamship Co. The new boat is to be a duplicate of the M. A. Hanna, which was launched for the same company at the Globe yards last Saturday afternoon. The work of putting the machinery into the M. A. Hanna will be done as early as possible, so that the vessel will be ready for a voyage as soon as navigation opens.

The Brown Hoisting & Conveying Machine Co., of Cleveland, has begun the erection of an ore unloading and storage plant of unusual size at the works of a large furnace company at Mariopol, South Russia. The contract is worth in the neighborhood of \$500,000. Orders for machinery have recently been received from furnace companies in Antwerp, Seraing, and Liege, Belgium; Valenciennes, France; Dortmund and Luxemburg, Germany, and three from Vienna, Austria. The company is also shipping to London two cantilever cranes valued at \$80,000.

The prospects of C. A. MacDonald of Chicago, carrying out his new insurance scheme, the plans of which were made known to the leading vesselmen during the winter, are brighter than ever, and the chances are that a new company will be formed. Mr. MacDonald is working hard and is confident of success. A large number of vesselmen have signed an agreement and will assist the movement. The matter has been placed in the hands of a committee to further work, with power to call on other parties to the agreement at any time assistance is needed. Local vesselmen are taking quite a little interest in the scheme.

A meeting of vessel owners on Saturday last was the theme of discussion among the marine men this week. The insurance men still believe the vessel owners are not in earnest in the present movement, protesting that it is done to bring them to time. They have refused to concede anything further than they have done during the last few months. There will likely be another meeting of vessel owners at which it is suggested that the capital stock of the new company will be fixed, and it is estimated at about \$1,000,000. It is the present understanding that when the officers are nominated Harvey D. Goulder will be elected president.

A conference of the ore handlers for all the Lake Erie ports was held here on Wednesday. Henry C. Barth, of Detroit, secretary of the National Longshoremen's Association, was present. Last year the ore handlers at Cleveland received 10 cents a ton for shoveling ore and the men at the other Ohio ports were paid 9 cents. For a number of years the rate paid at Cleveland has been higher than the rates paid at the other ports, and the men want the rate made uniform. After the question was discussed for some time it was decided to demand 11 cents a ton for shoveling ore at all the ports, which would be an advance of 1 cent per ton here and 2 cents a ton at the other Ohio ports and Erie. It was also decided to demand 20 cents an hour extra for overtime at night, and 25 cents an hour extra for overtime for Sunday work. The coal handlers were represented at the meeting and they fixed rates for the season. They will ask 3 cents a ton for trimming coal on all car dumping machines, and 7 cents a ton for handling fuel. Secretary Barter said that a meeting of lumber handlers was held at Toledo Tuesday, and that all the leading receiving ports were represented. A schedule of rates for unloading for all the ports was adopted.

The following data, covering a period of 28 years, have been compiled from the Weather Bureau records at Cleve-

land, Ohio: Month of April for 28 years—Temperature, Mean or normal temperature, 46°. The warmest month was that of 1896, with an average of 53°. The coldest month was that of 1874, with an average of 40°. The highest temperature was 85° on April 30, 1872, and April 18, 1896. The lowest temperature was 15° on April 17, 1875. Average date on which first "killing" frost occurred in autumn, Oct. 11. Average date on which the last "killing" frost occurred in spring, May 1. Precipitation (rain and melted snow).—Average for the month, 2.26 inches. Average number of days with .01 of an inch or more, 12. The greatest monthly precipitation was 5.38 inches in 1873. The least monthly precipitation was 1.38 inches in 1895. The greatest amount of precipitation recorded in any 24 consecutive hours was 1.65 inches on April 30, 1896. The greatest amount of snowfall recorded in any 24 consecutive hours (record extending to winter of 1884-5 only) was 4 inches on April 18, 1897. Clouds and weather.—The average number of clear days, 8; partly cloudy days, 12; cloudy days, 10. Wind.—The prevailing winds have been from the northeast. The highest velocity of the wind was 56 miles from the west on April 2, 1896.

The committee appointed by the executive committee of the Lake Carriers' Association at a meeting held here a few weeks ago to formulate a coal bill of lading has agreed to a plan which has been submitted to the officers of the association. The new bill of lading is now in the hands of Secretary C. H. Keep, of Buffalo. The members of the committee are H. A. Hawgood, Capt. W. C. Richardson and Capt. John Mitchell. The shippers have not as yet received a copy of the bill of lading and probably will not until it is adopted. They say that they will not be opposed to anything that is fair. For several years past vessels that carried coal to Portage lost very much time. Quite frequently they were in port several days before they got a dock. Shippers say that all the trouble was caused because the business was loosely handled, but that there will be a big improvement this season as all the business at Portage will be handled by one man instead of a half dozen different parties, as has been the case in the past. The trouble at Portage no doubt had much to do with the action of the vesselmen in formulating a bill of lading, as for several years past when a vessel was sent to Portage with coal there was no telling whether she would be unloaded in two days or a week. Boats that traded to other leading upper lake ports got fair dispatch last season, especially at the head of Lake Superior.

## FLOTSAM, JETSAM AND LAGAN.

Capt. and Mrs. Chas. Kimball left for their home at Whitefish Point light-house Tuesday, March 28, after spending the past three months with Capt. and Mrs. Frank Kimball at the Fort Gratiot light-house. Miss Marguerite Kimball will remain in this city for the ensuing year with Mr. and Mrs. Frank Kimball and attend school.

Mr. E. Platt Stratton, chief engineer surveyor to the American Bureau of Shipping, New York, is one of the most popular, as he is also one of the most prominent engineers on the Atlantic seaboard. Mr. Stratton very narrowly missed going into the marine newspaper business several years ago, and thereby the fraternity lost one of its best possible journalistic advocates.

Capt. Andrews, of Toronto, Ont., the well-known life-saver and who at one time was keeper of a United States life-saving station, has entirely lost his sight and now resides with his relatives. Capt. Andrews has the most creditable life-saving record of any person on the chain of lakes and is entitled to the sympathy and consideration of the marine fraternity in his physical affliction.

Captain P. C. Smith sold this week to Saginaw parties the barge Active, consideration private. The Active is a roomy lumber barge which has been carrying lumber from the Saginaw river to Lake Erie ports for years. Captain Smith has had good offers for some of his larger vessels, but on account of the bright prospects for lake traffic this season he has decided to remain in the vessel business at least one more season.

A law suit is in progress before Judge Swan, in Detroit, in which Capt. J. M. Balfour, Alexander Anderson, Capt. H. J. Lester and Capt. Andrew Scott and other Marine City residents are interested. The case is a damage suit for \$10,000 against the Northern Steamboat Co. on account of a collision of one of its boats, the steamer Northern Wave with the schooner Aurania in St. Clair river abreast of Port Huron last summer.

The Falls Hollow Staybolt Co., of Cuyahoga Falls, filled large orders this week for their safety hollow staybolts from The Neafie and Levy Ship and Engine Building Co., of Philadelphia, and Wm. A. Fletcher Co., of Hoboken, N. J. The high grade of material from which these staybolts are made, and the manner of making them, render them superior in testing qualities, and their easy application make them the most economical bolt in the market.

Conneaut, O., is preparing for an active season. There is no port along the chain of lakes that is doing more to court imports than Conneaut is and an early two million tons of iron ore will be the chief deposit there this summer. Brown hoists, McMyler unloading machines, King conveyor's Excelsior whirries, Thew automatic shovels, Hulett machines as manufactured by the Webster, Camp & Lane Machine Co., of Akron, O., electrical equipment for night work, in fact all that modern science and progress can do is called for at Conneaut and is being installed.



## MARITIME LAW.

*Circuit Court of Appeals, Sixth Circuit. Nov. 9, 1898.*

**COLLISION—DEFENSE OF INEVITABLE ACCIDENT.**—Where the cause of a collision was the sudden departure of a vessel from her course when about to meet and pass another, claimed to be due to inevitable accident, the burden rests upon her to show, not only that the initial sheer was due to such cause, but that she could not have overcome the effect of it by the exercise of reasonable care, caution, and maritime skill in her own management.\*

**SAME—DUTY OF OVERTAKING VESSELS.**—Under the navigation rules it is the duty of an overtaking vessel to pass at such a distance that her suction will not unreasonably interfere with the navigation of the one passed.

**SAME—EVIDENCE OF IMPROPER MANAGEMENT—SUCTION OF OVERTAKING VESSEL.**—The steamship Mather overtook and passed the Siberia at a distance of from 40 to 75 feet in an open lake several miles wide and from 25 to 30 feet in depth. The vessels were of about equal dimensions and tonnage, both heavily laden, and drawing about 15 feet of water. The Mather was going at a speed of 10 and the Siberia 9 miles an hour. As the Mather was drawing ahead, the Siberia drew towards her, the stern somewhat more than the bow, and, sheering from her course, continued on such deflected course for a diagonal distance of 800 or 1,000 feet, until she collided with and sunk the Ohio, a vessel going in the opposite direction, and which would have passed the Siberia, had the latter continued on her former course, at a distance of from 600 to 700 feet. Held, that while the initial sheer of the Siberia was probably due to the suction created by the Mather, for which the latter was in fault for having passed too close, such force was insufficient to account for the continuance of the Siberia on such deflected course for the distance traversed before striking the Ohio, had she been properly managed.

**SAME—CONTRIBUTORY NEGLIGENCE—SUDDEN EMERGENCY.**—When two meeting vessels by signals agreed on the course on which they should pass, and one suddenly sheered from her course, and within from 40 to 60 seconds struck and sank the other, the latter cannot be held in fault for not manœuvring in such unexpected emergency with the utmost promptness, skill and accuracy of judgment.†

Cross Appeals from the District Court of the United States for the Eastern District of Michigan.

This is a collision case. The steamer Ohio, bound up Mud Lake, coal laden, and having in tow the schooner Sheldon, came into collision with the steamer Siberia, bound down Mud Lake, and was so injured as to almost immediately sink in 33 feet of water. The Siberia was the colliding vessel, and sustained but a slight injury. This collision occurred between the can buoy and the entrance of the river St. Marys into Mud Lake. The Ohio sighted the propellers Siberia and Mather just as she was east of, and about abreast of the can buoy. The Siberia and Mather had just come out of the river St. Marys and were distant from the Ohio about 2½ miles. At that time the Mather was some 400 feet in the wake of the Siberia, and both were about heading on the can buoy. When distant about one-half mile from the Ohio, the latter indicated her intention to pass to port by a passing signal of one blast. This was replied to by both with like signals of one blast. At that time these boats were about abreast, the Mather having overtaken the Siberia, and being in the act of passing on the latter's starboard hand. When these passing signals were exchanged the courses of the Siberia and Mather were nearly parallel, the Siberia being headed for the can buoy and the Mather for a "lump" beyond that buoy, and slightly to the starboard thereof. They were then running very close together, the weight of evidence being that they were from 40 to 75 feet apart. At the same time the courses of the Ohio and Siberia were such as that, if each held its course, they would have passed each other at from 600 to 700 feet apart. The Mather was under a speed of about 10 miles per hour, and the Siberia at about 9 miles. The Mather, in a short time, gained on the Siberia so that she was about one-half of her length in advance of the latter. Just at this point, and when the distance diagonally between the Siberia and Ohio was from 800 to 1,000 feet, the Siberia departed from her course, and sheered suddenly to port, and within less than 60 seconds struck the Ohio on her port side, about 50 feet abaft of her stem, making a great hole, through which she filled, and rapidly sank. The libel filed by the Ohio charged faults against both the Siberia and Mather. The faults of the Siberia, thus charged, were: First, in not keeping a proper and sufficient lookout; second, in swinging to port and toward the propeller Ohio, and striking her, after passing signals of one blast had been exchanged; third, in not porting her wheel, and keeping to starboard, while approaching and attempting to pass the Ohio after the exchange of passing signals of one blast with her. The faults of the Mather were averred to be: First, in not keeping a proper and sufficient lookout; second, in attempting to pass the steamship Siberia when the latter was just about to meet and pass the propeller Ohio; third, in not giving the Siberia sufficient room on the latter's star-

board side to allow her to meet and pass the Ohio in safety; fourth, in drawing the Siberia out of her course, and causing her to sheer and strike the Ohio.

The answer of the Siberia set up the defense that the sheer which she took was wholly produced by the wrongful and negligent management of the Mather in overtaking and passing the Siberia so close as to produce suction, which threw the Siberia off on a sudden violent sheer, that this sheer and consequent collision were wholly beyond the control of the Siberia, although everything was done to break it, and recover her course, and avoid a collision, which it was in the power of the Siberia to do. No fault in the management of the Ohio was intimated in this answer. The answer of the Mather denies all fault in overtaking or passing the Siberia; denies that the Siberia's sheer was due to suction caused by the Mather's overtaking and passing her, but that the sheer was entirely due to the bad management of those in charge of her. The answer imputed no fault to the Ohio, but the record shows that during the trial of the cause the proctors of the Mather obtained leave to so amend the answer as to charge fault against the Ohio in not checking, stopping, and reversing so soon as the sheer of the Siberia began. This amendment is not found in the record, though it seems to have been treated as made by his honor, the district judge.

The court found: (1) That the Siberia was at fault in not reversing so soon as her sheer began, and that it was negligent to experiment with the helm before stopping and backing. (2) That the initial force which started this sheer was the suction of the Mather, which was at fault, as an overtaking vessel, in not passing the Siberia at a safe distance. (3) That the Ohio was negligent in not stopping and backing so soon as the sheer was discovered. The damages were divided equally between the three vessels. All parties have perfected appeals.

\*For collision rules in general, see note to The Niagara, 28 C. C. A. 532, and The Mount Hope, 29 C. C. A. 368.

†For signals of meeting vessels in general, see note to the New York, 30 C. C. A.

## THE MOON AND THE WEATHER.

The editor has been requested to remark upon some special ideas with regard to the relation of the moon to the weather. A gentleman at Huntington, Ind., states as a general observation, that "the position of the moon at new moon forecasts the temperature for the following lunar month. Thus, on June 18, 1898, the new moon occurred 25° farther north than on July 18, and much farther than on August 17. Has this northing any special relation to the weather?"

The editor answers, "no." Every careful study of suspected relations between the moon and the weather has shown that there are none. The same lunar phenomenon that is said to produce cold or rain in one part of the world is said to produce just the opposite somewhere else. The moon is too cold to radiate much heat, so that all phenomena that involve heat must depend upon the sun. True, the moon has an attractive power and can cause tides in the ocean as important as those caused by the sun, but that has little to do with our atmosphere. The atmospheric tide have not yet been shown to be important.—Monthly Weather Review.

## IRVING SCOTT REFUSED.

Irving M. Scott, the man who built the Oregon, once refused a raise in his salary. The firm was then building the Saginaw for the government. Donahue was at the Legislature much of the time soon after Scott's arrival, and affairs at the works were at sixes and sevens. Brodie, the foreman, threatened to leave and did leave, and Scott, without authority, and although only engaged as a draughtsman, took entire charge and directed things for two weeks until Donahue's return. He introduced a system into the methods and made affairs run along so smoothly that Donahue was pleased and made him permanent foreman.

About this time Donahue offered to increase his wages, but Scott thought over the matter and declined.

"If I break my year's contract with you," he said to Donahue, "I'll have to take what you give me. I prefer to keep my contract, and when it's up you'll have to pay me what I'm worth."

Donahue looked aghast. "You're the first man," he said, "that I've ever known to refuse a raise of pay."

Results justified Scott's foresight. At the end of the year he was re-engaged and was paid just four times what Donahue had offered him.—Ainslee's Magazine.

## A MISSIONARY YACHT.

The Gospel yacht, now being built at Jefferson, Ind., will shortly make a trip to the Cuban coast. She will have on board a devoted band of preachers and missionaries; in fact, the entire crew will be ministers or mission workers, and the sole object of their voyage to make converts.

The yacht is the largest ever built for the purpose. She is 160 feet long, with an auditorium or chapel 'tween decks capable of seating 700 persons. The decks will seat about 100 more and be used for religious services whenever practicable. The boat is to be launched on the Ohio river and will reach the ocean by way of the Ohio and Mississippi waters. Missionary work will be carried on along the way and advantage taken of every opportunity to preach. Several of the workers speak Spanish.

The yacht will sail under the auspices of the Gospel Yacht Association, which is international, and has about 300 members. The crew will be supported by the members of the association, many of whom are prominent clergymen, and by voluntary offerings from the people with whom they work.

The idea of the Gospel yacht was suggested by missionaries who were impressed with the needs of sailors. Boatmen on the Ohio were cut off practically from all forms of worship and the Mississippi was little better. Sailors often testified that they had been for months without an opportunity to go to church though within sight of land, in a Christian country. Not only were sailors deprived of worship, but fishermen as well had few opportunities. Alongshore there are not many churches and the chances to get inland were few and far between. Now and then a strolling preacher would tell the Gospel but not often.

The Gospel yacht grew out of this idea, and she was built with the one thought of helping sailors and fishermen, though people on the coast may profit by it.

Nor will the innovation appeal to the working class alone. During their short experience the yacht workers have found that if opportunity affords, wealthy persons will come on the Gospel yacht as she lies at anchor of a Sunday morning. Amateur yachtsmen will leave their magnificent private craft to spend an hour in prayer and song, and be glad of the chance.

The purpose of the yacht will be to help physically as well as spiritually. The missionaries will recognize no nationality. Cuban and Spaniard alike will be invited to attend the floating chapel. The Christian religion will be spread along the northern and southern shores of our new possessions wherever a community can be found.

The Chapel Boat Society, or Gospel Yacht Association, as it is also called, was organized Nov. 6, 1897. The officers are: President, George E. Benn, Jeffersonville, Ind.; vice presidents, Dr. J. A. Phelps, High Bridge, Ky.; George B. Snyder, Aurelius, Mich.; Deacon E. M. Sanders, Aurelius Mich.; James Gibson, De Witt, Mich.; A. G. Winscott, High Bridge, Ky.; treasurer, Edwin S. Harris, Eaton Rapids, Mich.; general secretary, Ilene Wallace, Zeno, O.; assistant secretaries, Grace Bateman, Aurelius, Mich.; Mary Mayfield, Science, Ky, and Ida Williams, Wheeler, Mich.

## FOR THE CANADA'S CUP.

They are building three boats of the 35-foot class in Hamilton, to compete in the trial races for the Canada's cup, and one of the boats, it is expected, will be a freak. This is a boat that is being built by Capt. J. H. Fearnside, of the Royal Hamilton Yacht Club, and the Johnson Bros. The boat is well under way, but she is being built under cover, and every possible precaution is being taken to keep people not directly interested in her from seeing anything of her model.

The Victoria Yacht Club, which had such a great success with its small boats and was anxious to challenge for the Sewanhaka International cup, has a syndicate composed of Frank E. Walker, commodore; Rear Commodore R. H. Chilman, W. Burnside, F. E. Carpenter, and Harry Kuntz, a wealthy brewer, which is building a boat. The work is being superintended by Mr. Burnside, who is a most successful builder of small boats. The frames are all set up and the boat is expected to be out on the water by the beginning of May.

The third boat is going to be built by Mr. James Weir, who has built three champions in the smaller classes and the most successful boats that have sailed during the last five years in the 27-foot classes. He is building his boat entirely independently from any syndicate and principally as a speculation. His boat is progressing much slower than any of the others, because he is importing all the material he is using.



**SLAG CEMENT.**

In a late issue we had occasion to refer to the subject of cement in sea and harbor water and incidentally alluded to the application to slag cements of a patent recently issued to Mr. H. J. Livingston, of Baltimore, Md. It being, however, brought to our notice that the slag cement question is of interest to many of our readers who, as is natural in a district where vessel owning and iron are prominent industries, have capital embarked in both directions, and to whom slag has often been suggested as a means of profitably dealing with a cumbersome waste product, we, therefore, again refer more fully to this part of the article.

Engineers are, of course, aware that slag cements have been brought forward again and again during the last 40 or 50 years, only to be as often withdrawn. Cements of this class are essentially hydraulic, but that is their chief, if not only, virtue. There are several different kinds of furnace cinder available for cement making, but as our readers are only concerned with that obtained from the iron blast furnaces of the United States, our remarks will apply more particularly to the average of such slags.

The objections to these slags for cement making may be summarized thus: Irregularity of composition; variation of temperature at which they are chilled; an amount of caustic lime usually produced by the heat at which the chilled slag is dried; and above all they contain 2 to 2½ per cent. of sulphur which, unless the cement be kept entirely under water, will inevitably destroy it in course of time. Others might be mentioned, but the foregoing will suffice.

Apropos of these it is grimly amusing to hear how placidly the advocates of slag cements, possessing all or most of the drawbacks above enumerated, recommend their use for foundation work! An ordinary individual would probably think that the foundation of a building or bridge pier was about the last place to introduce a material of more than doubtful reputation. "But," say some of them, "we get rid of the sulphur." A little inquiry, however, elicits the fact that they get rid of it by dumping it on their customers, and we cannot see any other way.

The invention, which we suggested as being applicable to slag, can never make a slag cement, but it evidently can be applied so as to make, with slag as a basis, a mortar closely resembling Portland cement mortar, in which case all the objections referred to will be so minimized as to be harmless.

The conclusion seems to be that our waste iron furnace slag is not an available source of reliable cement; that with the sulphur so diluted, as proposed in the invention referred to, a good hydraulic mortar closely resembling Portland cement mortar may be produced, that the manufacture of the latter may be profitably undertaken if it can be sold at about two-thirds the cost of Portland cement and this is often very difficult, though not impossible. It would be well for our readers to regard all slag cement enterprises with caution.

**NAVAL FUELING.**

Five thousand tons of coal are being loaded at Newport News for the Navy Department, and will go through the Suez Canal direct to Admiral Dewey. All the coal used by the fleet under his command, as well as that sent to Honolulu, is shipped chiefly from the Atlantic seaboard, principally from Baltimore or Newport News. Since the close of the war 40,000 tons have been sent to Manila on steamers and sailing vessels, the former proceeding through the Suez Canal and the latter around the Cape of Good Hope. The trip through the canal takes nearly two months, while that around the Cape covers nearly five months. All coal sent to Honolulu goes in sailing ships around the Horn. It has been suggested that coal might be taken from the Pacific coast, but tests made two years ago by the Bureau of Equipment of coal mined on the Slope shows that the variety is far inferior to that coming from the East. Some coal was purchased in Australia and sent to Manila for the fleet, but little compared to the vast quantities sent from this country.

**DREDGE FOR RUSSIAN CANALS.**

The United States consul at Liege, Belgium, has forwarded to the Department of State a description of two immense dredges now being constructed for the Russian government at Seraing, Belgium, at a total cost of \$559,700. One just completed, called the Volga, will be used by the Russian government in digging the extensive ship canal to connect the Baltic sea with the Volga river, a great engineering project now under consideration for deepening and widening the Volga its entire length. The dredge is able to move 4,000 cubic yards of sand, gravel, clay, or similar

material per hour to a distance of 700 feet. The earth is cut up and mixed with water by revolving trepans, until it is of a consistency that can readily be forced up by two powerful steam pumps of 1,428 horse-power each. The dredge has an electrical plant, to provide light and to run several small motors for the more delicate parts of the machinery. The dredge is 214 feet 6 inches long, 61 feet 6 inches wide, and when ready for work, draws 4 feet 6 inches of water. It can excavate a channel 80 feet wide and 14 feet deep at one cutting. The fuel used is naphtha, and when the dredge is in full blast, it consumes about 1,200 gallons per hour. Tanks are provided which hold sufficient fuel to run the dredge at full pressure for 24 hours. When in full operation, it will give employment to 36 men, as follows: Stewards, 6; engineers, 12; and laborers, 18.

**GRAIN AT THE HEAD OF THE LAKES.**

Duluth grain stocks last week increased 989,000 bushels. Wheat stocks increased 731,000 bushels. The elevators are full for the first time in their history. The grain in elevators amounts to 19,630,000 bushels, of which 10,165,000 bushels are wheat, 5,516,000 corn, 2,071,000 oats, 299,000 rye, 471,000 barley, 1,108,000 flax. There is perhaps room enough for 500,000 bushels more grain but it has been reserved for receipts that are expected this week. To all practical purposes the public elevators are filled to the bin tops for they cannot take grain for general storage. The elevators will be able to take a little wheat but receipts will probably cease altogether within the week and the shipments will be diverted to Minneapolis until after the opening of navigation. Present indications are that the lake will not open at Duluth until May 1. Meantime dealers in cash wheat will have an enforced vacation of four to six weeks.

The nearest approach Duluth and Superior elevators ever before were to being full was in 1893 when they contained over 16,000,000 bushels, mostly wheat.

**BOILER TUBES.**

The requirements to be met by boiler tubes for use in the U. S. Navy should ensure the use of tubes of nothing but the best quality of material. They are to be of lap-welded mild steel or lap-welded charcoal iron. The tubes to be tested are selected by a naval inspector who selects 3 from each lot of 100. The failure to pass the required tests satisfactorily will reject the whole lot. The code of rules issued by the Bureau of Steam Engineering for the testing of tubes is as follows:

1. A piece 3 inches long, cut from one tube, must stand being flattened by hammering until the sides are brought parallel, with the curve on the inside at the ends not greater than three times the thickness of the metal, without showing cracks or flaws, the bend at one side being in the weld.
2. A piece 1¼ inches long, cut from one tube, must stand crushing in the direction of its axis, under a hammer, until shortened to ¾ in. for stay tubes and to ½ in. for ordinary tubes, without showing cracks or flaws.
3. The end of one tube, cold, must stand having a taper pin, taper 1½ in. to the foot, driven into it until the end of the piece stretches to 1½ times the original diameter, without showing cracks or flaws.

Seamless and lap-welded mild steel tubes 3 inches in diameter and larger, for steam and water pipes. They must pass requirement No. 1, but requirement No. 2 is altered to the following, and No. 3 is omitted.

2. Two pieces which have been cut from the ends of two test tubes, shall, after annealing, stand flanging cold to a 1-in flange, when the diameter of the tube is from 3 ins. to 6 ins. or to a 1½ in. flange when the diameter of the tube is greater than 6 in.

**MAIL IN DISPUTE.**

When a firm or company dissolves partnership, and contention arises as to whom the mail matter addressed to the former business firm or company, or its officials, shall be delivered, the postmaster will require them to designate some third person to receive the mail, retaining all mail matter until said person is selected, and if no one is designated to take the mail from the postoffice, nor an agreement between the contending parties is reached before the expiration of 30 days from the date when delivery ceased, all mail held in dispute shall be sent to the Dead Letter Office, until an agreement is made or receiver for the mail appointed. If, however, such letters bear card requests for their return if not delivered within a certain time, they shall be returned to the sender direct, at the expiration of the time named, care being taken to mark all such letters "In Dispute."—The Postal News, Detroit.

**NOTES.**

THE Jenkins Bros.' illustrated catalogue for 1899 has just been issued. Valves and packing are the Jenkins Bros.' specialties, and they are fully in the market, as is well known by some of our patrons who tell us directly that they are one of the best firms in the United States to do business with. They always guarantee perfect satisfaction in the workings of their output and are a broad liberal firm in so far as trade and business ethics are concerned.

THE United States survey steamer Pathfinder was given her trial trip on the 17th inst. on Long Island Sound. Under natural draft the boat attained a speed of 14 knots and under forced draft 16 knots, exceeding her contract requirements for speed, which specified 12 knots. The ship will be fitted out for her first voyage (to Manila) at Hampton Roads. This vessel was launched at the Lewis Nixon yards in Elizabethport, N. J., on December 7, last, and was described in our issue of December 10, 1898.

As a result of several meetings in New York, marine insurance companies have just arranged revised policy conditions and tariff rates for the insurance of the hulls of inland and coasting steamers and vessels. The heavy losses that occurred on the coast, lakes and rivers in 1898, and the havoc wrought on the coast by the blizzard last November, made underwriters realize the necessity for reforming the business, and as it was found that the ordinary form of marine policy was entirely inapplicable to vessels exposed to such special risks, safeguards have now been provided in the new policy and will this week be adopted by all the companies.

WITH an authorized capital of \$3,000,000, the Maritime Improvement Co. has been incorporated at Trenton, N. J. The company will enter into the construction of canals, wharves, electric light and gas plants, and with Charles H. Cramp at the head of the organization, the promoters expect to make it one of the most important enterprises started within recent times. "The Dutton lock system will be one of the principal features of the new company," said Mr. Cramp. "We expect to show something entirely new in the way of taking care of ships in the course of repairs or transit from lock to lock. The old method of gates will be abolished, and in the place of this we will have something similar to a floating elevator, which will virtually be one ship within another."

C. A. PARSONS has contrived to overcome the objections which were raised by some naval experts after the steam trials of the Turbinia, the general introduction of steam turbines as propulsive agents in steam vessels will be only a question of time. The new arrangement of turbine machinery, just made public by the inventor, which, by the way, is particularly adopted to torpedo boat destroyers, will go a long way to quicken their adoption. The combination comprises six turbines and four propeller shafts, four of the turbines being utilized for going ahead and two for steaming astern. When going full speed ahead each shaft is driven by a separate turbine; when, however, it is desired to reverse the motion of the vessel steam is cut off and admitted to the astern-going turbines, which are coupled to two of the propeller shafts. Two vessels to be fitted with this type of machinery are at present under construction on the Tyne for the British Admiralty, and the speed expected to be realized is 35 knots, or 5 knots in excess of that attained by the most recent types of high-speed destroyers.

UNDER the naval appropriation bill the bureau of equipment is authorized to expend \$400,000 for coaling stations at different points where they may be desired. The location of these stations is wholly in the discretion of the Secretary of the Navy, but he will no doubt be guided by the recommendations of Rear Admiral Bradford, chief of the bureau of equipment. The admiral has not yet made any recommendation, but it is known that he believes there should be some good coaling depots at Manila and San Juan, Porto Rico, also at Guam. Besides these, he believes there should be a very large coaling depot in the vicinity of Shanghai, China, to supply the United States vessels cruising in the North China sea and in Japanese waters. It is also probable that a coaling station and depot will be located somewhere on the Maine coast. There is no such station north of Cape Cod, and naval officers have reported the need of one above that point. Portsmouth, N. H., is being used as such a station, but some point on the Maine coast seems to be preferred, which can be reached easily by the large vessels of the navy. There is water enough at Portsmouth, but the channel reaching the naval station is somewhat difficult for large vessels.





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CLEVELAND, O., MARCH 30, 1899.

## A REPORT FROM LAKE SUPERIOR.

The coal docks at the head of the lakes will probably demand 3,000,000 tons this year, an increase of 500,000 tons over the coal receipts of last year, while other Lake Superior ports will receive 200,000 tons. Capt. Alex. McDougall states that the elevators are filled with grain ready to move out with the opening of navigation, while there are big reserves of wheat still in the hands of the farmers of the Northwest, 20 per cent. of the crop, it is said, and there is still a large amount of coarse grain to come from the West and Southwest. Lumber will be produced here in greater quantities than ever before, and present sales indicate that the movement will be active. About 11,000,000 tons of iron ore are said to be under charter, which disposes of a large amount of vessel tonnage for the season. We are confronted with a late opening of navigation. The first cargo of ore to leave Two Harbors last year was on April 10th. This year it will not get away before May 10th. There is a prospect also that the underwriters will fix the date for the expiration of insurance at December 1st, which will make the season ten days shorter. With a loss of three or four weeks at the opening, and another at the close of navigation this year, it will mean a loss of two or three round trips for the entire lake fleet for the season. New tonnage coming out to go in commission this year will only exceed that which passed out of existence, or which went to the Atlantic last year, by a small amount. The stage of water this year promises to be about the same as last year."

The announcement that Capt. Alexander McDougall had severed his connection with the management of the American Steel Barge Co., is undoubtedly premature. The rumor probably originated from the fact that Capt. McDougall has organized a company in Duluth for the purpose of conducting a general vessel agency business under the firm name of Alexander McDougall & Co. Mr. Wm. A. Thompson, Jr., will be associated with Capt. McDougall in the new firm. Success will undoubtedly attend this undertaking on the part of Capt. McDougall, as he enjoyed a very large business when engaged as a vessel agent at the head of the lakes before the American Steel Barge Company was organized and still retains some valuable connections. It is understood that one special aim of the new firm will be to stand aloof from any interests that might interfere with impartial treatment for such vessels as they may represent.

An inquiry has been addressed to the Bureau of Navigation if the scale of provisions prescribed by section 23 of the act of December 21 last must be printed in the copy of the ship's articles for coastwise steamships and be "posted," which question was referred to the Attorney-General. A decision has just been rendered by him in which he interprets the law to apply to coast-wise vessels, and, therefore, the insertion of the scale of provisions is necessary.

## WEATHER BUREAU ICE REPORT.

The Weather Bureau reports indicate that navigation will be resumed on the Great Lakes between April 10 and 20, except on Lake Superior, where the conditions do not appear favorable for general resumption of navigation before May 1 to 10.

Buffalo, N. Y., March 25.—Westerly winds of the past few days brought ice eastward to outer lighthouse and has filled harbor with floating ice, so that as far as can be seen ice fields are visible, but much more broken up, showing the effects of the recent high winds. New ice formed during the past two days; estimated thickness, 7 to 8 inches. Navigation will open about April 12.

Cleveland, Ohio, March 25.—No ice in view from points along the shore in this section; but large fields are reported at the lower end of lake; at the west end and in the Detroit river the ice, last Wednesday, caused postponement of departure of passenger boat from Detroit. The first boat is now announced to leave Detroit for Cleveland on Monday, the 28th. It still seems probable that the opening of general navigation will be as late as April 10, possibly not earlier than the 20th.

Detroit, Mich., March 25.—Lake St. Clair is full of pack ice, with an ice jam at mouth of the lake; the Detroit River is free of ice to Lake Erie; reports from the west end of Lake Erie indicate that there is very little ice between the mouth of the river and Point Pelee. The ferry Promise endeavored to cut a passage to the flats on the 19th and failed, and will try again on the 26th. The Cleveland steamer made no effort to open navigation to Cleveland during the week, but will make the attempt Monday.

Port Huron, Mich., March 25.—Reports from various points on the Michigan shore indicate a continuous field of ice, with but few openings, extending north to Thunder Bay; no movement of ice perceptible during the past two weeks; Saginaw and smaller bays covered by firm, heavy ice; jam continues near mouth of St. Clair river. It is not probable that navigation will be resumed before April 20.

Grand Haven, Mich., March 25.—The harbor remains clear, and there is only a narrow band of ice along the shore outside; the fields of floating ice are now reported to be in the western portion of the lake. The amount of ice has increased rather than diminished during the past two weeks, and vesselmen think that it will be May 1 before the opening of general navigation.

Chicago, Ill., March 25.—Vessel masters state that there is some thin ice and snow on the west shore of Lake Michigan, and some fragments of ice in other portions of the lake, but nothing to interfere with navigation. Service to St. Joseph has already begun, and steamers will begin to run to Grand Haven about April 1; general navigation will open about the 20th of April. The displayman at Mackinaw reports: "No change in the condition of ice in the Straits since last reports; no water to be seen from Cheboygan or Waugoshance lighthouses; opening will be very late unless continued warm weather begins soon."

Sault Ste. Marie, Mich., March 25.—Unusually cold weather has prevailed during the week; ice remains about 34 inches thick in front of the city. The general opinion is that the opening of navigation will be between April 25 and May 1.

Marquette, Mich., March 25.—Lake conditions have not changed during past week. Ice is about 10 inches thick and extends, as a solid sheet, in all directions, as far as can be seen. A high south or southwest wind will readily carry the ice out and break it up; prevailing winds from other directions would cause ice to seriously obstruct navigation. Ice is covered with about 2 feet of snow.

Escanaba, Mich., March 27.—Ice 24 to 30 inches; estimates of opening of navigation now from April 26 to 30.

Milwaukee, Wis., March 25.—During the early part of the week extensive fields of floating ice were encountered along the west shore, especially between this point and Chicago. The steamer Atlanta, of the Goodrich Line, was caught in the ice near Racine and delayed, but escaped without injury. Advices received by local vesselmen indicate that general navigation will probably not be resumed until the latter part of April.

Duluth, Minn., March 25.—Harbor ice ranges from 15 to 40 inches thick, general average 32 inches; outside ice varies from 13 to 21 inches thick, and field extends at least 60 miles along south shore and 150 miles up north shore and out from latter point as far as one can see. Conditions do not now appear favorable for resumption of general navigation until between May 1 and May 10.

## LAUNCH OF THE STEEL STEAMER M. A. HANNA.

The steel steamer M. A. Hanna was successfully launched from the yards of the of the Globe Iron Works Co. on Saturday last. Despite the disagreeable weather the large shipyard was crowded and quite a few ladies were with the launching party. The christening ceremony was performed by Miss Fanny W. Hanna, daughter of Mr. L. C. Hanna.

The Hanna will be completed May 15 and will carry ore from the head of Lake Superior to Lake Erie ports. Capt. Parsons will command her and Mr. Henry Graves will have charge of her machinery.

The new boat will be managed by the Cleveland Steamship Co., of which Capt. John Mitchell is manager. The stockholders of the company are among the leading vesselmen and coal and ore shippers. The general dimensions of the Hanna are 430 feet over all, 410 feet keel 50 feet beam and 26 feet deep. She will have verticle triple expansion engines, 23, 37½ and 63 inches, with 42 inch stroke. She will have three Scotch boilers 12½ feet in diameter and 12 feet long, to be allowed 180 pounds working pressure to the square inch. The new boat will carry 5,800 tons of ore on 17½ feet.

Among those who witnessed the launch were: Messrs. L. C. Hanna, James C. Wallace, Capt. A. B. Wolvin, of Duluth, Loftus Cuddy, Capt. John Mitchell, John F. Wedow, Capt. Alfred Mitchell, R. L. Ireland and H. B. Nye, who are all interested in the lake carrying trade. The launch was one of the most even, best-timed, and in every way successful.

## ICE AT THE STRAITS.

ST. IGNACE, March 25, 1899.

Editor *Marine Record*, Cleveland, O.:

Thinking you may wish some information about condition of ice in this vicinity and the prospect of vessels getting through the Straits I write you, the ice is unusually heavy, both in the head of Lakes Michigan and Huron, and also in the Straits, in fact, much heavier than it has been for twenty-five years. I came here to live twenty-five years ago this spring, at which time the first boat through the Straits was on May 14, so I do not see any chance of the Straits opening before May 1st, at the soonest, as the ice is all packed. March 22d, last year, the mail boat to Mackinac Island commenced running in practically clear water; to-day there is nearly three feet of ice, with a covering of one foot of snow. Ice has been making all this month, the cold at night from zero to twelve below, with continued snowstorms.

Yours truly,

LEWIS RYERSE.

## VESSELS CLASSED.

Vessels classed and rated this week by the American Bureau of Shipping, New York, in the "Record of American and Foreign Shipping" are as follows: Screw, Kershaw; owned by the Merchants' & Miners' Transportation Co., ship, Arthur Sewall, owned by Messrs. Arthur Sewall & Co.; barge, Henry L. Gregg; British screw, Phoenix; British ship, Euphemia; British ship, Josephus; British schooner, F. B. Wade; Swedish barkentine, Carolina; Swedish galliott, Svea.

THE Canada Cup races will be sailed on August 4th, 6th and 8th, on the Island course, Toronto Bay. The trial races for the defender of the cup will be sailed during the second week of July, and the Lake Yacht Racing Association events will be held during the third week, and the Canada Cup races during the first week in August, which makes three weeks of racing here in one month. All details for the Canada Cup races have been agreed upon by the Royal Canadian Yacht Club, the holder of the cup at the present time, and the Chicago Club, which is challenging for the trophy. Both clubs have agreed not only to live up the scantling rule but also to live up to its spirit.

THE Union Iron Works at San Francisco, Cal., has been awarded the contract for two large freight steamers. The vessels are for the American-Hawaiian Steam Navigation Co., with headquarters at New York, in which Dearborn & Co., and Filert & Co. are interested. The company is to ply its craft between New York, Philadelphia, San Francisco and Honolulu, with the possibility of extending the route. The first steamer is to be turned out in April, 1900, and the second one at a later date. Each will have a carrying capacity of 8,500 tons. The first vessel will be 410 feet long, with 51 feet beam and a depth of 32 feet. The engines are to develop 2,500 horse-power.



## APPOINTMENTS OF MASTERS AND ENGINEERS.

CAPT. L. S. SULLIVAN, Toledo, O.—Steamer D. W. Rust, master, Wm. J. Leaver; engineer, L. F. De May. Schooner C. C. Barnes, master, Geo. W. Burter. John Schuette, master, E. N. Van Dusen. Chicago Board of Trade, master, Geo. R. Bonnah.

MESSRS. J. & T. COLSON, Thorold, Ont.—Steamer Erin, master, Capt. P. Sullivan; engineer, P. J. Kerr. Schooner, F. L. Danforth, master, Jno. Cornwall.

THE ANCHOR LINE, Buffalo, N. Y.—Steamer India, master, P. O'Neil; engineer, D. Donohue. China, master, Chas. Christy; engineer, John Wise. Japan, master, Jno. Dougherty; engineer, Wm. Wilson. Alaska, master, Edward Martin; engineer, Edward H. Davis. Wissahickon, master, John McCarthy; engineer, Fred Rehbaum, Sr. Delaware, master, J. H. McAvoy; engineer, Albert H. Edgar. Juniata, master, Geo. Delaney; engineer, John Forrester. Conestoga, master, H. Cronkhite; engineer, Wm. Nolan. Lycoming, master, L. Wright; engineer, Alex. Jones. Conemaugh, master, F. Bloom; engineer, W. A. Black. Lehigh, master, J. H. Berow; engineer, Timothy Griffin. Clarion, master, Chas. Nelson; engineer, James Erskine. Susquehanna, master, Dall Ryder; engineer, Geo. McLeod. Codorus, master, A. McKenzie; engineer, Wm. Swain. Mahoning, master, Jos. Corcoran; engineer, Chas. J. Fox. Schuylkill, master, H. O. Miller; engineer, John Gordon.

THE MACKINAC TRANSPORTATION CO., CAPT. L. R. BOYNTON, MGR., St. Ignace, Mich.—Steamer St. Marie, master, L. R. Boynton; engineer, R. Walsh. St. Ignace, engineer, M. H. O'Brien.

ISLAND TRANSPORTATION CO.—Steamer Algomah, master, G. W. Boynton; engineer, Joseph Rosseau. Wau-Ron, master, A. R. Graves; engineer, M. J. Fleming.

THE SPRY LUMBER CO., Chicago, Ill.—Steamer John Spry, master, Frank Elliott; engineer, Jno. Dechine. John T. Johnston, master, John Trudo.

THE U. S. & ONTARIO S. S. CO., Conneaut, O.—Steamer Shenango No. 1, master, R. R. McLeod; engineer, Geo. Collinge.

THE DETROIT & CLEVELAND NAVIGATION CO., Detroit, Mich.—Steamer City of Detroit, master, Alex. J. M. McKay; engineer, Wm. S. Huff. City of Cleveland, master, Archie McLachlan; engineer, James Middleton. City of Alpena, master, Mathew Lightbody; engineer, A. Phillips. City of Mackinac, master, H. J. Slyfield; engineer, Wm. McDonald. City of the Straits, master, Duncan McLachlan; engineer, James Sargent.

P. J. RALPH & CO., Detroit, Mich.—Steamer S. J. Macy, master, M. W. Gotham; engineer, W. F. Gregory. Schooner Mabel Wilson, master, J. E. Gotham.

MR. P. L. PENNINGTON, Cleveland, O.—Steamer C. B. Lockwood, master, R. Jollie; engineer, Chas. Stoeber. Geo. Spencer, master, F. B. Powell; engineer, Adam Haag. Schooner B. L. Pennington, master, H. L. Savage.

MR. W. E. CHRYSLER & CO., Harbor Springs, Mich.—Steamer Hazel, master, W. E. Chrysler; engineer, Patrick Crossen. Adrienne, rebuilding.

MR. A. C. MERRYMAN, Marinette, Wis.—Fire tug, Menominee River, master, Joseph Carrigan; engineer, Charles Emerson. Schooner S. A. Wood, master, Thos. L. Turnbull.

MR. J. B. FAIRGRAVE, Hamilton, Ont.—Steamer Arabian, master, Oliver Patenaude; engineer, Wm. Harwood.

THE BOOTH PACKING CO., Chicago, Ill.—Steamer H. R. Dixon, master, J. F. Hector; engineer, Jas. E. Evans. Hunter, master, E. S. Smith; engineer, Geo. Belloir. Wm. Maxwell, master, John A. Dahlmer; engineer, Jos. Martin. Oval Agitator, master, Jos. Ferguson; engineer, Wm. Boyce. Valliant, master, Daniel McCauley; engineer, Ed. Hogarty. Louisa, master, Oscar Cornelius; engineer, Wm. Goodwin. W. G. Harrow, master, Jos. Singler; engineer, Jas. Hendricks. Duchess, master, John Peterson; engineer, G. Downer. F. R. Anderson, master, Thos. Hadland; engineer, Thos. Lindland. T. H. Camp, master, John Swanas; engineer, Geo. McNeal. R. W. Currie, master, Chas. Nogglegard; engineer, Freeman Briggs. Pearl, master, D. Johns; engineer, Frank Spaulding. Florence, master, Carl Burch; engineer, J. Welsh. S. S. Burton, master, J. A. Dash; engineer, A. Burhuir. Liberty, master, Benj. Lewis; engineer, John Kelly. C. W. Endress, master, W. B. McLean; engineer, D. B. Smith. E. M. B. A., master, John Finnessy. Peter Coates, master, John H. Trodden; engineer, E. Thayer.

THE BESSEMER STEAMSHIP CO., Cleveland, O.—Steamer Henry Cort, master, S. C. Allen; engineer, W. A. Gervin.

James B. Neilson, master, Harry Gunderson; engineer, A. P. Williams. Sir Henry Bessemer, master, C. E. Moody; engineer, Richard Masten. Sir William Siemens, master, R. E. Byrns; engineer, J. W. McLachern. Robert Fulton, master, H. W. Stone; engineer, J. B. Hayward. Sir Wm. Fairbairn, master, W. H. Campau; engineer, S. W. Armstrong. James Watt, master, F. W. Stenton; engineer, V. W. Fox. John Ericsson, master, John Ward; engineer, D. McVicar. George Stephenson, master, John Lowe; engineer, F. H. Warner. Samuel F. B. Morse, master, E. M. Smith; engineer, H. J. Reynolds. Barge Sir Joseph Whitworth, master, Arnold Nordahl. John Scott Russell, master, O. W. Holdridge. Alexander Holley, master, G. L. Durand. George H. Corliss, master, W. S. Hoag. Alfred Krupp, master, Samuel E. Lewis. Sidney G. Thomas, master, Max Langell. W. LeBaron Jenney, master, F. E. Ingraham. Sir Isaac Lothian Bell, master, H. A. Byrnes. James Nasmyth, master, J. S. Van Aenseller. John Fritz, master, A. McArthur. John S. Roebling, master, Frank Rice.

## NEW TONNAGE.

Sailing—S. O. Co. No. 86 gross tonnage, 1,102; net, 954; built at West Superior, Wis., and hailing from Chicago, Ill.

## NOTICE TO MARINERS.

The Light-House Board gives notice of the following changes to go into effect on the opening of navigation for 1899:

One fixed red lens-lantern light will be shown from the rear beacon of Ashtabula range light station, near the shore end of the westerly pier of the entrance to Ashtabula harbor, in place of the two lights (one white vertically above one red) heretofore exhibited.

One fixed red lens-lantern light will be shown from the rear beacon of Black river range light station on the shore end of the westerly pier at the entrance to Black river harbor, in place of the three lights (red, white and red, arranged vertically) heretofore shown.

The 3½-order fixed white light at Braddock Point light station, on the southerly shore of Lake Ontario, about 2¾ miles west-northwesterly from Braddock Point, will be changed so that it will be visible from all points of approach from the lake.

One fixed red lens-lantern light will be shown from the rear beacon of Genesee range light station, near the shore end of the westerly pier at the entrance to Charlotte harbor, in place of the three lights (red, white and red, arranged vertically) heretofore exhibited.

The color of the tower on Cross-Over Island, westerly side of the channel of the St. Lawrence river, will be changed from brown to white. The color of the sixth order light on Sunken rock, southerly side of the channel of the St. Lawrence river, about one-half mile below Alexandria Bay, will be changed from white to red, and the color of the tower will be changed from brown to white. The color of the tower on Rock Island, southerly side of the channel of the St. Lawrence River, at the head of the "Narrows," will be changed from brown to white.

MESSRS. MERCHANT & CO., of Philadelphia, New York and Chicago, have recently received an order from the War Department for 786 of the galvanized "Star" Ventilators, for use on the officers' quarters and barracks to be erected at Havana and Matanzas, Cuba. There will be 567 "Star" ventilators, 24 in. diameter, and 199 14 in. diameter. Great promptness is necessary in the delivery of these "Star" ventilators, which the exceptional facilities of Merchant & Co. will enable them to accomplish. Some idea of the size of the order can be had, when it is stated that if these ventilators were placed in a line with their edges touching, they would cover a distance of nearly half a mile. Within the last few months Merchant & Co. have also supplied 500 18 in. ventilators for the new government hospitals at Fortress Monroe and Savannah.

ACCORDING to an article in the Weekly Record, published at Sturgis, South Dakota, Jan. 6, 1899, the word "blizzard" was in use at least as early as 1867. In that year the Hutchinson County Herald gives an account of the blizzard that suddenly approached the town of Vermilion, calling it by that name as one in common use when applied to a sudden change from warm and balmy weather to a blinding snow with cold northwest winds. The old settlers of South Dakota take exception to the statement that the word "blizzard" originated with a Chicago newspaper, The Advance, on the 8th of January, 1880.

## RESOLUTIONS IN REGARD TO FREEDOM OF PRIVATE PROPERTY ON THE SEA FROM CAPTURE DURING WAR.

ADOPTED BY THE MERCHANTS' ASSOCIATION OF NEW YORK.

Whereas, the President of the United States in his annual message communicated to Congress at the opening of the third session of the Fifty-fifth Congress, on December 5th, 1898, made the following recommendation:

"The experiences of the last year bring forcibly home to us a sense of the burdens and the waste of war. We desire, in common with most civilized nations, to reduce to the lowest possible point the damage sustained in time of war by peaceful trade and commerce. It is true, we may suffer in such cases less than other communities, but all nations are damaged more or less by the state of uneasiness and apprehension into which an outbreak of hostilities throws the entire commercial world.

It should be our object, therefore, to minimize, so far as practicable, this inevitable loss and disturbance. This purpose can probably best be accomplished by an international agreement to regard all private property at sea as exempt from capture or destruction by the forces of belligerent powers. The United States Government has for many years advocated this humane and beneficent principle, and is now in position to recommend it to other powers without the imputation of selfish motives. I therefore suggest for your consideration that the Executive be authorized to correspond with the governments of the principal maritime powers with a view of incorporating into the permanent law of civilized nations the principle of the exemption of all private property at sea, not contraband of war, from capture or destruction by belligerent powers;" and

Whereas, thereafter, the Honorable Orville H. Platt, of Connecticut, introduced in the United States Senate, and the late Honorable Nelson Dingley, of Maine, as the last official act of a long and honorable career in Congress, introduced in the House of Representatives of the United States, a concurrent resolution approving and adopting the recommendations of the President as above quoted, which resolution was duly referred to the Committee on Foreign Relations of the Senate, and the Committee on Foreign Affairs of the House of Representatives, and which now have the same under consideration; and

Whereas, such recommendation is in accord with the openly proclaimed policy of the United States in regard to the freedom of private property on the sea from capture during war for more than a century, and the present is eminently a fitting time for effecting the exemption of non-offending commerce on the sea, and consummating this great reform in the laws of naval warfare, which will be of lasting and incalculable benefit to the commerce not only of this country, but of the entire world, and, as was fitly described over three-quarters of a century ago, as a "crown of glory to modern diplomacy;" and

Whereas, every one engaged in any mercantile or manufacturing business will be benefited by the adoption of the international rule recommended by the President, and there is at this time a universal demand for the passage of the resolution now pending in Congress,

Now, therefore, be it resolved, that the Merchants' Association of New York, on behalf of merchants of the United States representing over one thousand million dollars of capital and many times that of mercantile transactions, heartily endorses the recommendation of the President of the United States, and urges the Senate and the House of Representatives of the United States, and the several committees thereof above mentioned, to favorably report and adopt the said concurrent resolution, authorizing the President and Secretary of State to carry out the said recommendations; and further

Resolved, that every member of this association be, and hereby is, requested to use his efforts and influence to obtain the adoption of the principle of freedom of private and non-offending commerce on the sea from capture during war; and further

Resolved, that a copy of these resolutions, duly certified and under seal, be transmitted to the President of the United States, and the Chairmen of the Committees of Congress to which such resolutions have been referred, and also that copies be sent to every member of the Cabinet of the President, of the Senate and of the House of Representatives,

S. C. MEAD,  
Assistant Secretary.

## CANADIAN ITEMS.

Capt. Wigle has been re-appointed to the steamer Lincoln.

Capt. J. V. Trowell, who was in charge of the Ocean last season, has been re-appointed.

Mr. J. W. Taylor left this week for Goderich to fit out the machinery of the steamer J. J. Long.

Capt. J. S. Moore and Engineer Jas. Smeaton will be in charge of Myles' Sons steamer Myles this season.

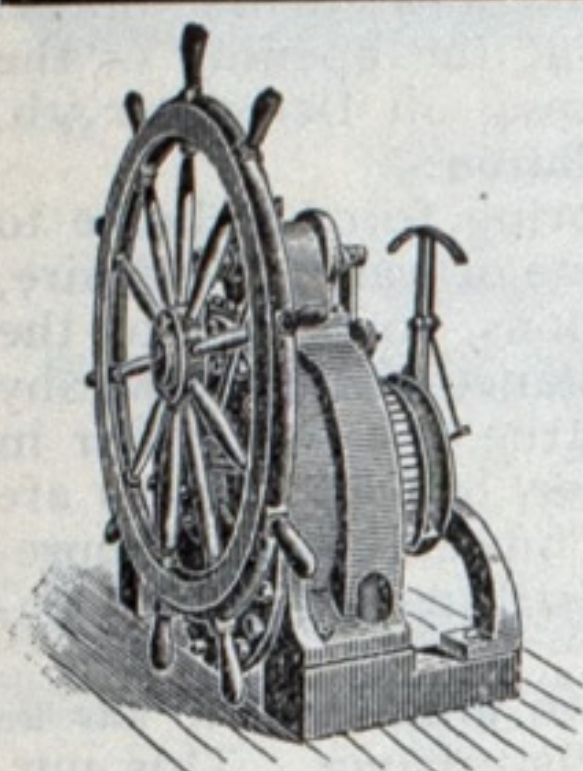
The officers of the steamers of the Beatty line are: United Empire—Capt. McNabb; engineer, S. Busbin. Monarch—Capt. E. Robertson; engineer, E. W. McKean.

Capt. J. McMaugh, with engineer J. H. Ellis, has been appointed to the steel freighter Algonquin, and Capt. Jas. Ewart and Engineer Deel to the steamer Rosedale.

The C. P. R. has made the following appointments to their upper lake steamers: Manitoba—Capt. E. B. Anderson; engineer, W. Lewis. Athabasca—Capt. G. McDougall; engineer, W. Lockerbie. Alberta—Capt. J. McAllister; engineer, Angus Cameron.



## Queen City Patent Hydraulic Steerer.



The best and most reliable.

Generates no heat in pilot house.

Has large hand wheel.

Can be changed from power to hand steering instantly.

A favorite with pilots.

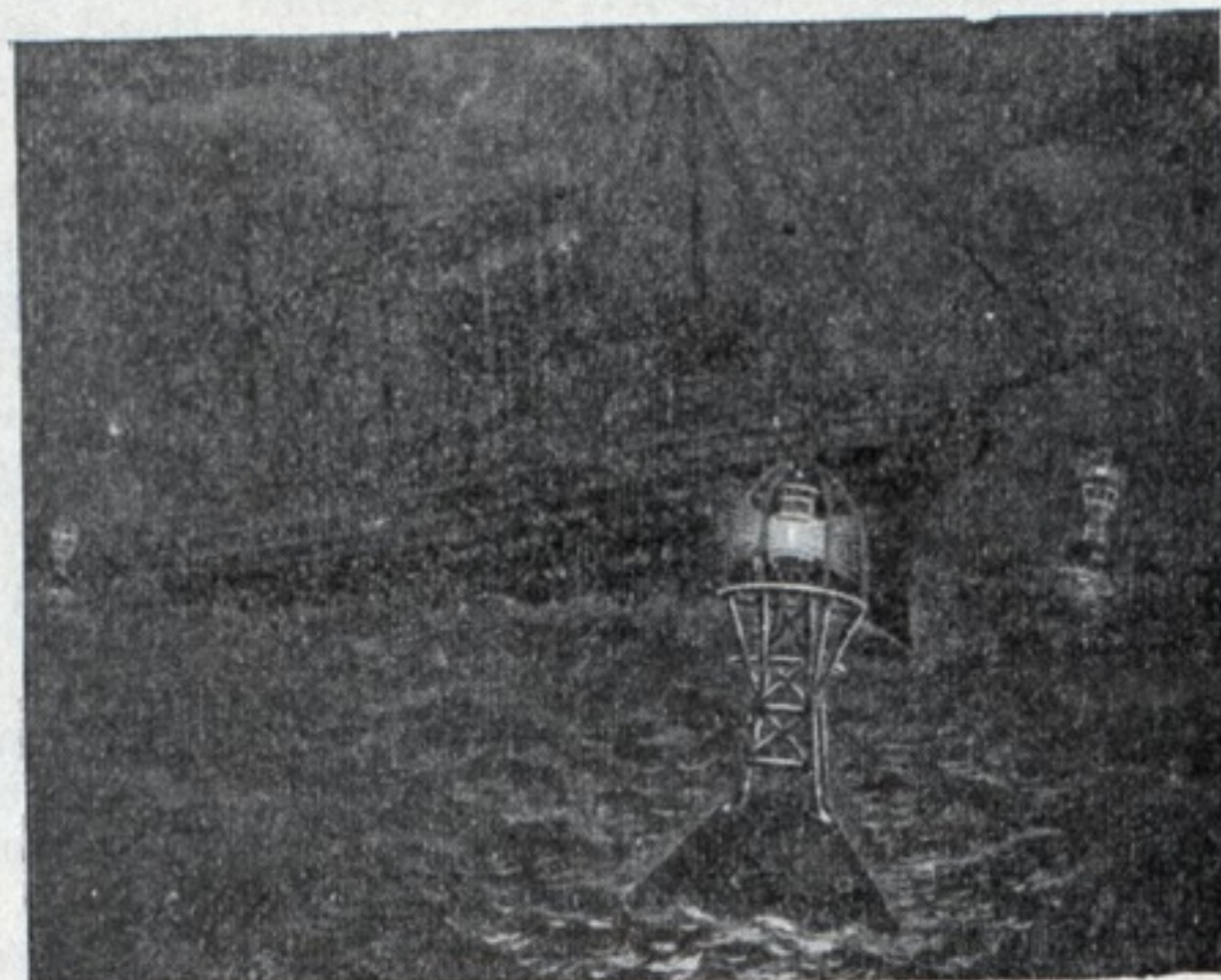
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**Queen City Engineering Co.**

BUFFALO, N. Y.

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Adopted by the English, German, French, Russian, Italian, and United States Light-House Departments for channel and harbor lighting. Over 800 gas buoys and gas beacons in service.



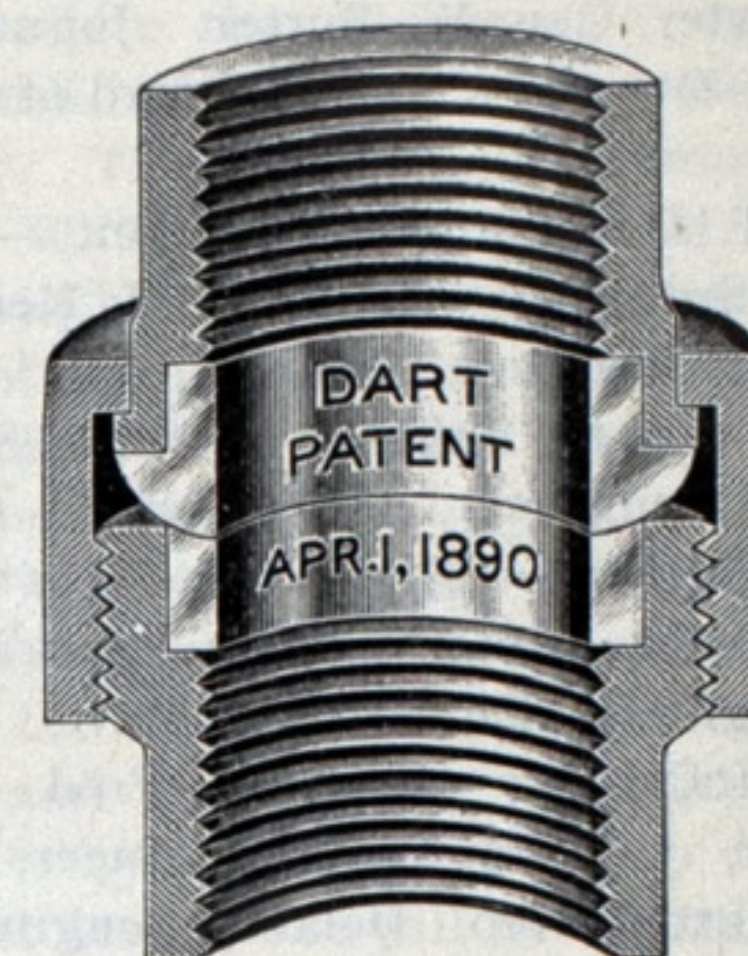
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from 80 to 365 days and nights without attention, and can be seen a distance of six miles:

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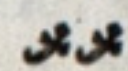
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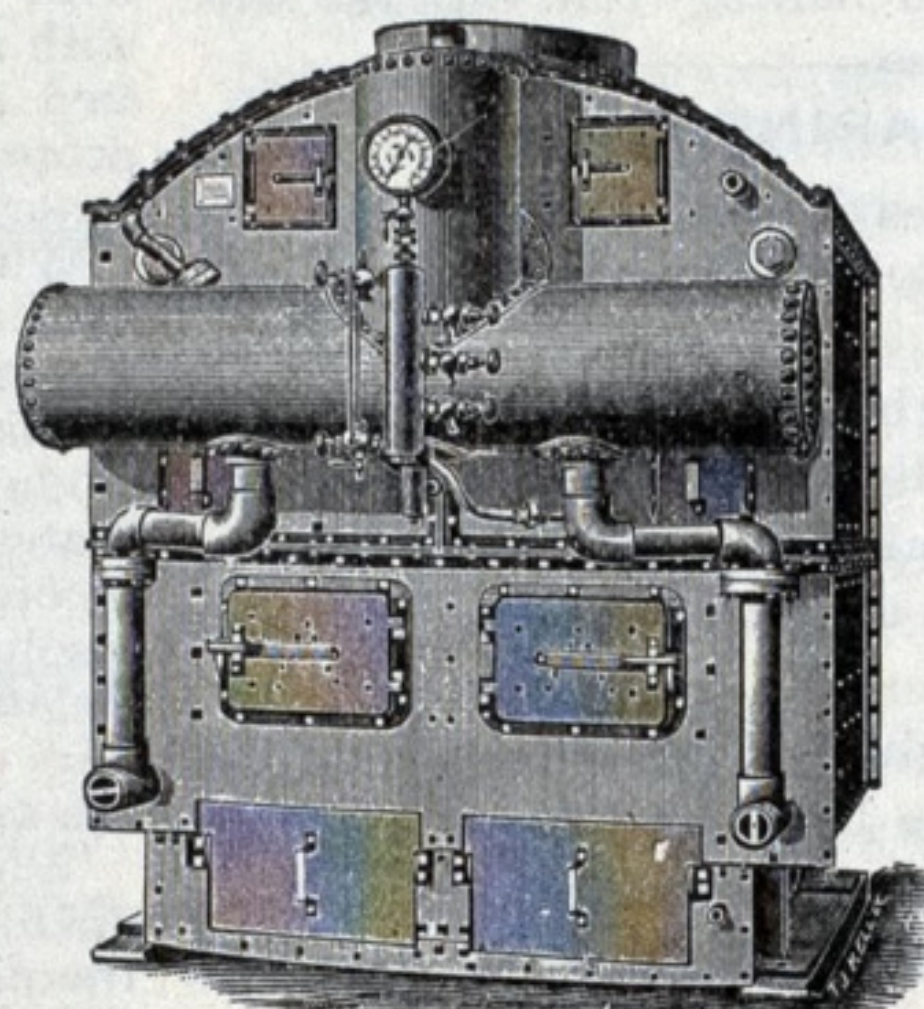
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### SHIPPING AND MARINE JUDICIAL DECISIONS.

(Collaborated specially for THE MARINE RECORD.)

**Title of Lands Under Great Lakes.**—The title and dominion over lands covered by the Great Lakes belongs to the state in which the lands are located. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Right to "Wharf Out."**—The shore owner of lands on Lake Michigan has no right to "wharf out" from his premises into the lake, though in aid of navigation. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Erection of Piers in Lake Michigan a "Purpresture."**—At common law, the erection of piers in Lake Michigan, in front of one's premises, without a grant or other authority from the state, is a purpresture. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Rights of Shore Owner on Lake Michigan.**—A shore owner on Lake Michigan has no title to, or right to build on, the land below high-water mark, under the common law, and the common law has not been changed in Illinois. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Carriers—Liability to Consignee—Replevin by Shipper.**—The mere fact that a shipper of goods replevied them while in the carrier's hands does not exonerate the carrier from liability to the consignee, who was not notified of the replevin action. *Spiegel vs. Pacific Mail S. S. Co.*, 56 N. Y. Supp. 171.

**Unauthorized Pier May be Enjoined Though Not a Public Nuisance.**—An unauthorized encroachment on the soil of the shore, which is termed a "purpresture," though not injurious or a public nuisance, may be enjoined or abated on the information of the attorney general. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**No Right to "Wharf Out" to Protect Land from Erosion.**—An owner of land bordering on Lake Michigan has no common-law right, as riparian owner, to "wharf out" into the lake in order to protect the shore of his land from erosion, though he may erect structures on his own land for such purpose. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Common Law Riparian Rights.**—The only common law riparian rights of a shore owner on Lake Michigan are the right to the accretion, and the right of access from his land to the lake; and the common law in regard thereto has not been changed or modified in Illinois by statute, custom, or usage. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Reclaiming Land Under Lake Michigan.**—In an information in equity, in the name of the people by the attorney general, to enjoin an owner of land from reclaiming any of the bed of Lake Michigan, where the commissioners of a park, as a board, have taken no action whatever in reference to the commencement or prosecution of the action, and they

have no interest in the result, except such as shared by the people at large, the contention that the people have no interest in the litigation, and that the real parties are such commissioners, is not tenable, though defendant, by a supplemental answer, undertakes to bring into the controversy the rights of such commissioners under an act of the legislature, where that matter is not responsive to anything in the information. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Piers in Lake Michigan Causing Accretions.**—The construction of piers, by a shore owner on Lake Michigan which extend into the lake, causing accretions extending the boundary of his land into the lake, is an act injurious to the state, which may be abated in equity on application of the attorney general. *Revell vs. People*, 52 N. E. Rep. (Ill.) 1052.

**Collision—Excessive Speed in Fog.**—Nine or ten knots at any time or place is excessive speed for a vessel in a fog, and the custom of ocean steamers to make such speed or greater will not relieve one of them from legal liability, under the international rules, for a collision occurring under such circumstances. *The Columbian*, 91 Fed. Rep. 801.

**Collision—Crossing of Steamship and Ferryboat.**—A custom for ferryboats to yield their privilege in crossing to larger steamers, or of the latter to exact it, and take the right of way, contrary to the rules of navigation, is not a legal justification to a steamship for a failure to recognize the right of precedence of a ferryboat, resulting in a collision. *The Mohegan*, 91 Fed. Rep. 810.

**Negligent Navigation—Rate of Speed in Fog.**—Where a steam ferryboat was proceeding in North river within 300 feet of the New York piers, and where the river was usually occupied by vessels, in a fog such that the constant sounding of fog signals was required, full speed cannot be considered moderate speed, within the usual rules of navigation. *The Albany*, 91 Fed. Rep. 805.

**Shipping—Action for Freight.**—Where the defense to an action for the freight of a cargo is that it was carried under special charter by the day, and a bill of lading of the cargo has been introduced, evidence that it is not customary to give a bill of lading where the boat is chartered by the day is admissible. *Zimmerman vs. Rainey et al.*, 56 N. Y. Supp. 199.

**Negligent Navigation in Fog.**—The steam ferryboat Albany was proceeding from the New Jersey shore, across the North river, to her slip in New York, about five miles distant. There was a fog, which made it impossible to see objects at any considerable distance, and fog signals were continually sounded. Her usual course was about 300 feet from the piers on the New York side, on account of vessels anchored in the center of the river which was there about 2,800 feet wide. She proceeded at full speed, which was some ten miles an hour, until it was discovered that she was

within 150 feet of the Thirty-fourth Street Pier, when her course was changed, and her speed reduced one-half. At Thirty-second street she collided with and injured the Newark, a cattle boat, which had tied up to the end of the pier on account of the fog. As soon as the Newark was seen, the Albany changed her course, and attempted to avoid a collision; but, when she struck the Newark, her course was such that she would have passed within 30 or 40 feet of the end of the pier. Held, that the navigation of the Albany was negligent, and that she was in fault for the collision. *The Albany*, 91 Fed. Rep. 805.

**Collision—Defense of Inevitable Accident.**—Where the cause of a collision was the sudden departure of a vessel from her course when about to meet and pass another, claimed to be due to inevitable accident, the burden rests upon her to show, not only that the initial sheer was due to such cause, but that she could not have overcome the effect of it by the exercise of reasonable care, caution and maritime skill in her own management. *The Ohio*, 91 Fed. Rep. 547.

**Contributory Negligence of Moored Vessel.**—The Newark was not in fault for a collision, in failing to give signals while moored to the pier, nor because she used no stern line, and her stern swung out somewhat from the pier, the slips adjacent not being used by ferryboats, and there being no occasion to expect vessels to enter, and it appearing from the course of the Albany, that the collision would not have been avoided, had the Newark lain close to the end of the pier through her entire line. *The Albany*, 91 Fed. Rep. 805.

**Negligence of Schooner.**—A collision occurred about midnight, in a fog, between the ocean steamer Columbian and the schooner Doughty, which was on the banks for fish. The steamer was making an excessive speed, and the schooner was neither at anchor nor quite under way nor under control, but was making about two knots an hour. There was no man at the wheel, but her helm was lashed. Only two men were on deck. She had no torch nor flare-up ready for use, and was otherwise insufficiently lighted, and her fog horn was not regularly sounded. Held, that the schooner as well as the steamer was in fault. *The Columbian*, 91 Fed. Rep. 801.

**Collision—Accident Without Fault.**—The tug M. overtook and passed Transfer No. 3 with her heavy tow, coming down the East River off pier 16. The M. after passing in ahead of No. 3 and when about 500 feet in advance of her, broke her valve stem so that she became disabled. When soon afterward the breakdown was discovered, danger signals were given to the tow behind, and shouts, and the tug was turned to go into the docks, but her way was gone, the collision occurred; on contradictory evidence, held, that No. 3 had no notice that the M. was disabled until the boats were too near to avoid collision in the flood time, and that the collision was an accident without fault. *The Transfer* No. 391, Fed. Rep. 803.



## FREIGHT CARRYING RECORDS ON THE LAKES.

The craze on the Atlantic Ocean to break flying records to Europe finds its counterpart on the Great Lakes in trying to break carrying records. Each new steel steamer built is known by its wonderful capacity for transporting enormous cargoes from one port to another. Thus the record for 1898 shows that each succeeding ship was built for the purpose of carrying a little more than the largest then in existence. Early in the year the steel freighter, Andrew Carnegie, broke the record by carrying a cargo of 230,000 bushels of corn, equal to 6,440 tons. When the steamer Linn was launched, she carried a cargo of 6,314 tons of ore, and later, 6,496 tons of corn, just breaking the record established by the Carnegie. Following this steamer, the Superior City was launched, and she easily broke all records by carrying a cargo of 7,563 tons of corn. This steamer holds the record for her class to-day. The steamer Morse, constructed after the Superior City, is 25 feet longer; but she has not yet attempted to lower the carrying record. The immense carrying capacity of these vessels makes them valuable investments if no accident happens to them, but the system of overloading makes their powers of navigation a little uncertain in rough weather. Some of the steamers carry a whole elevator load of grain, and do the work with such dispatch that the cost was never before so low. The Superior City carried a load of 7,562 tons of ore, and discharged it in twelve hours, breaking the lake record for rapid unloading, as well as for carrying the largest cargo. These steel freighters are what is known as the 400-foot class and they are the favorite ones on the lakes to-day. They range from 400 to 475 feet in length, and they cost from \$200,000 to \$300,000; but they frequently carry cargoes valued at twice their own cost.—Geo. E. Walsh, in Cassier's Magazine for April.

## SEISMIC NOISES.

Mr. John H. Eadie, of Bayonne, N. J., offers an ingenious explanation as to the origin of the seismic noises frequently heard without any appreciable earthquake shock, viz., that their origin is similar to that of the noises heard in steam-heating apparatus. As is well known, these are caused by the concussion between two masses of water coming together with considerable speed in a space that is almost entirely vacuous. The steam that should fill the pipes is easily condensed if the pipes are cold and the fall of even a drop of water through a vacuous space of 10 or 15 feet, or the rush of water from opposite directions into a space in which steam has just been condensed produces loud noises that would not be made if there were enough air in the pipe to act as a buffer. But it does not seem likely that this explanation could apply to the action of steam in the internal crevices and caves of the interior of the earth as is

suggested by Mr. Eadie, because the surfaces of these cavities can hardly be cold enough to condense the aqueous vapor to the extent necessary to cause the observed phenomena. Neither would the sudden release of gas under pressure escaping into a subterranean passage act like a water hammer unless the passage were appreciably free from air, and this seems rather unlikely.

On the whole most scientists are inclined to adhere to the general conclusion that these subterranean noises originate in the breaking, crunching, and sliding of layers of rock and earth under great pressure.

## EASTERN FREIGHT REPORT.

The demand for grain boats for Cork f. o. and larger tonnage for picked ports has unfortunately dwindled down to the most insignificant proportions, nor can we at time of writing report a better enquiry. The silver lining to the clouds at the moment overhanging our freight market may, however, be found in two facts, viz.; the marked falling off in the demand for tonnage in the river Plate, which would appear to indicate a curtailment in the anticipated volume of shipments thence, and the revival of demand for cotton room in the south, following a sharp decline in the price of this commodity; the latter movement, if sustained, should be the first to exercise an influence favorable to our freight rates. Our list of time charters still shows numerically fair results, but at the moment the demand appears to have petered out, and time charterers still coming on the market are practically free from competition. Timber freights have of late proved more attractive for owners, and a number of trades from the gulf, now pending, may be closed at any moment, as views of shippers and owners are drawing together and are now but little apart.

## EXPLORATIONS OF THE AMAZON.

Commander Todd, U. S. N., of the gun boat Wilmington, now, or lately, cruising in Venezuelan waters, has been assigned a job that ought to be almost as interesting as fighting. He has been directed to go up the Amazon as far as the Wilmington can go, and take notice of what he finds there. It is said that no United States vessel has ever navigated the Amazon above Mananos, which is 850 miles up stream. The Wilmington draws 8 feet 10 inches, and it is thought that she can go 1,000 or 1,200 miles farther. The upper Amazon is not absolutely unexplored, but information about the district it traverses and the folks who live along its borders is vague, scarce and unreliable.

It may be that the government's orders to send Commander Todd up the Amazon was the report, recently issued, of the inter-continental railroad commission, which has been busy for ten years past in investigating the feasibility and probable cost of a railroad from New York to Buenos Ayres. The distance is about 10,200 miles, of which nearly 5,000 is

covered by railroads already built. The commission has spent nearly \$300,000 in its researches, of which the United States provided \$245,000; Brazil, \$30,000, and the other South American republics the rest. It first met in Washington in December, 1890, when it organized three survey parties—one under Capt. E. Z. Steever, to survey south from Mexico; one under Mr. William F. Shuck to survey north from Quito, and one under Mr. J. Imbre Miller to survey south from Quito to Lake Titacaca in Bolivia. The surveys were finished about three years ago. Now the results have been worked out and the report sumptuously published. The verdict is that the road is perfectly feasible, and that the road bed of the main line, including masonry, grading and bridges (but not rails) would cost about \$175,000,000. The most expensive and difficult section of the proposed line would be in Colombia, Ecuador and Peru, where the road skirts the Andes for 3,600 miles, at an estimate cost of \$125,000,000.—E. S. Martin in Harper's Weekly.

NAVAL engineering officials have planned the construction of a new machine shop at Brooklyn navy yard, entirely different from that of the plant recently burned. The present idea is to extend the present boiler shop toward the dry docks, a distance of 400 feet, move the boiler-making plant to the lower end of the structure, and devote the western end to the machine shop, pending the erection of a new building on the site of the old one. This new building will be modeled on the plan of the construction machine shop, one story high, with a monitor roof, 365 feet long and about 150 feet wide, the added depth of 75 feet being taken from the length of the boiler shop.

## VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo.....	895,000	24,000	1,000	21,000	373,000
Chicago.....	4,452,000	12,120,000	1,474,000	416,000	870,000
Detroit.....	271,000	389,000	1,000	3,000	9,000
Duluth and Superior	10,165,000	5,516,000	2,071,000	299,000	471,000
Milwaukee.....	50,000	1,000	4,000	6,000	110,000
Montreal.....	19,000	16,000	451,000	3,000	6,000
Oswego.....					
Toledo.....	310,000	719,000	126,000	3,000	
Toronto.....	60,000		17,000		19,000
Grand Total.....	30,067,000	33,237,000	11,229,000	1,428,000	2,261,000
Corresponding Date, 1898.....	30,061,000	43,382,000	11,636,000	3,265,000	1,517,000
Increase.....	75,000		155,000		
Decrease.....		229,000		75,000	285,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

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EUGENE L. ELLISON, Vice President.  
BENJAMIN RUSH, Second Vice President.  
JOHN H. ATWOOD, Assistant Secretary.

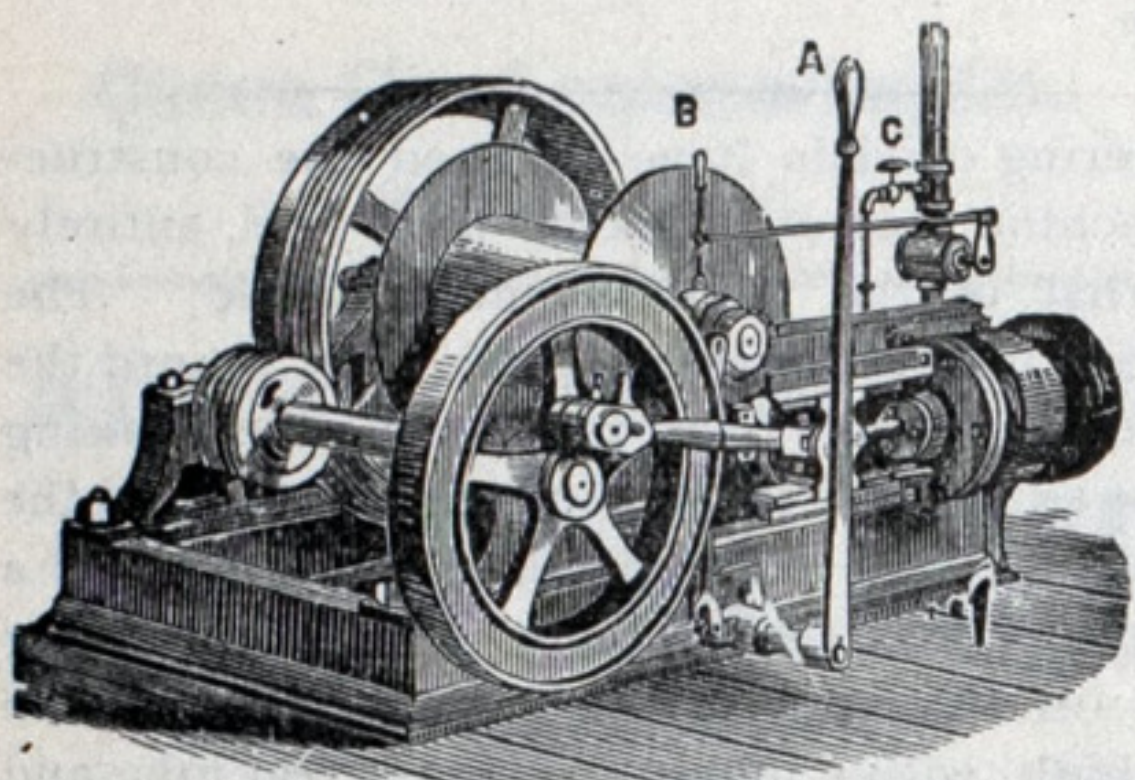
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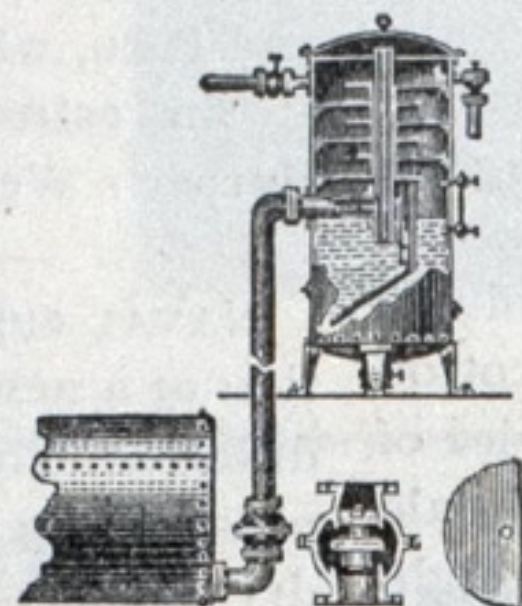
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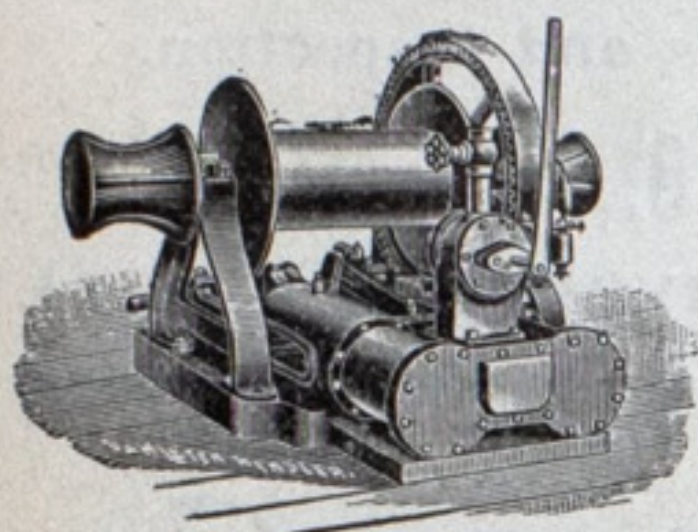
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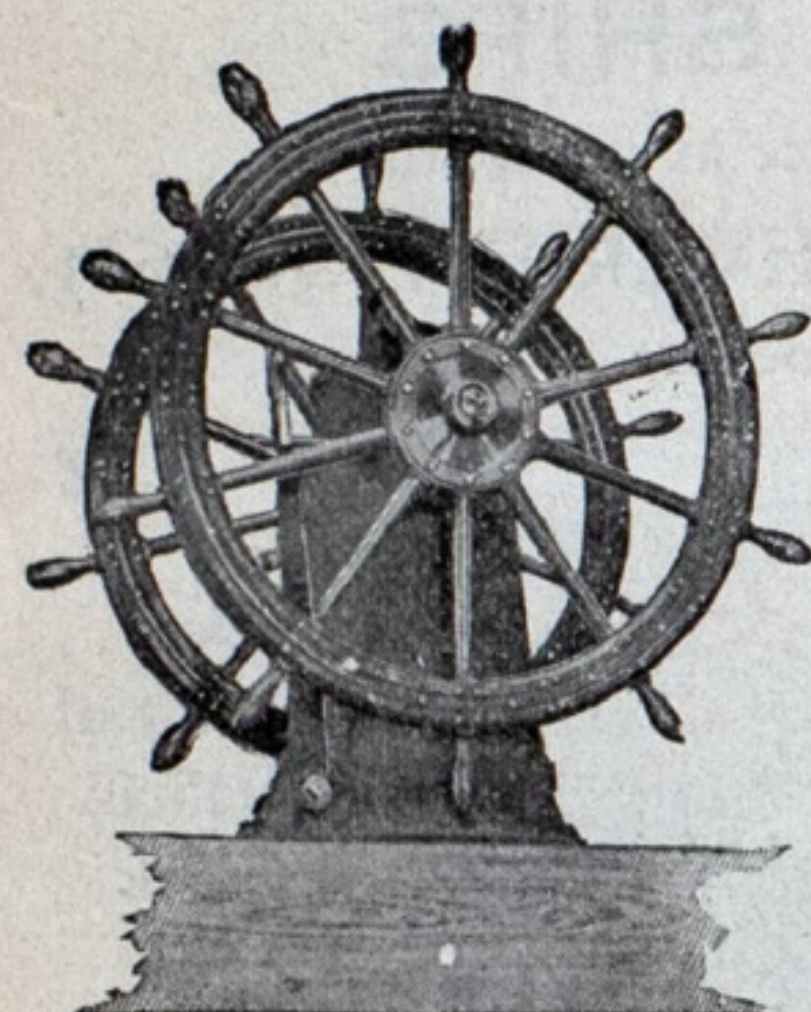
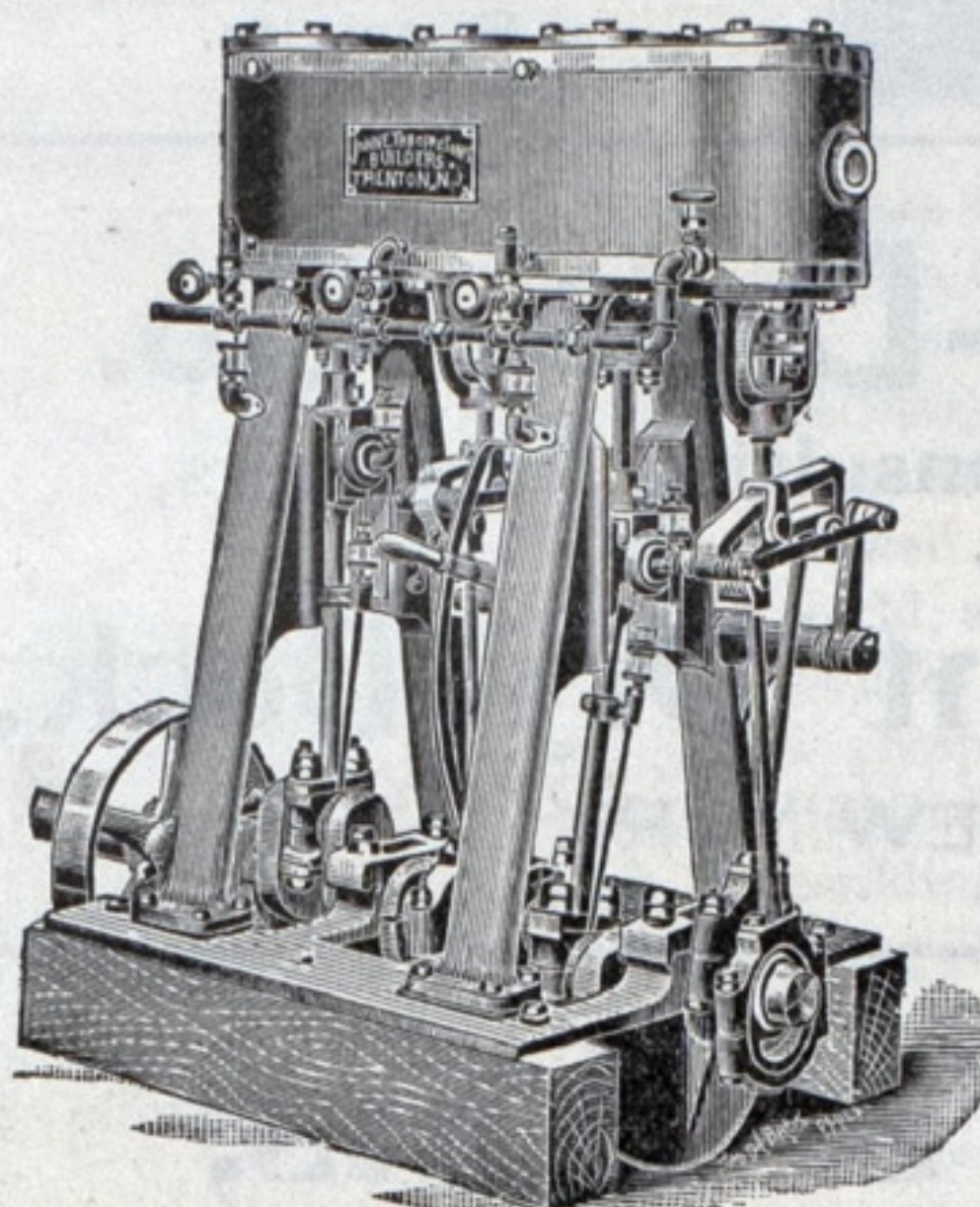
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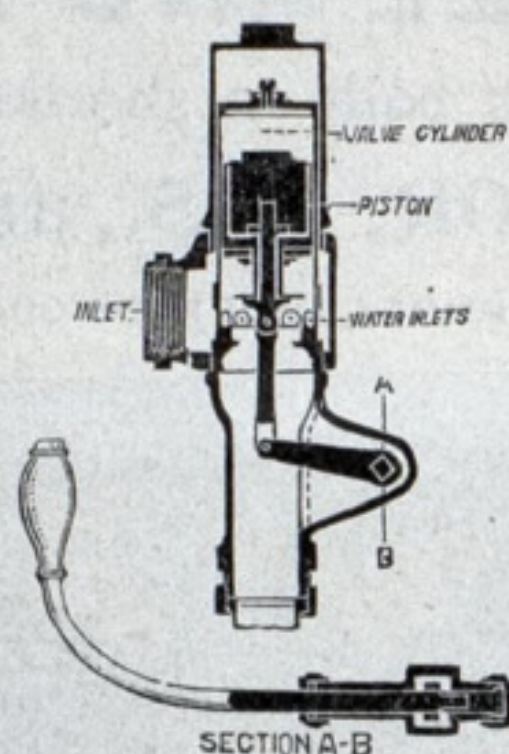
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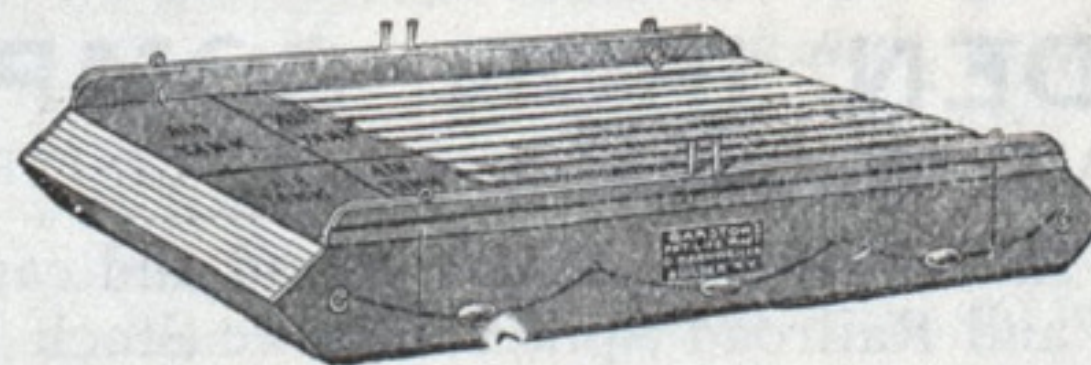
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WOODEN  
LIFE  
BOATS.



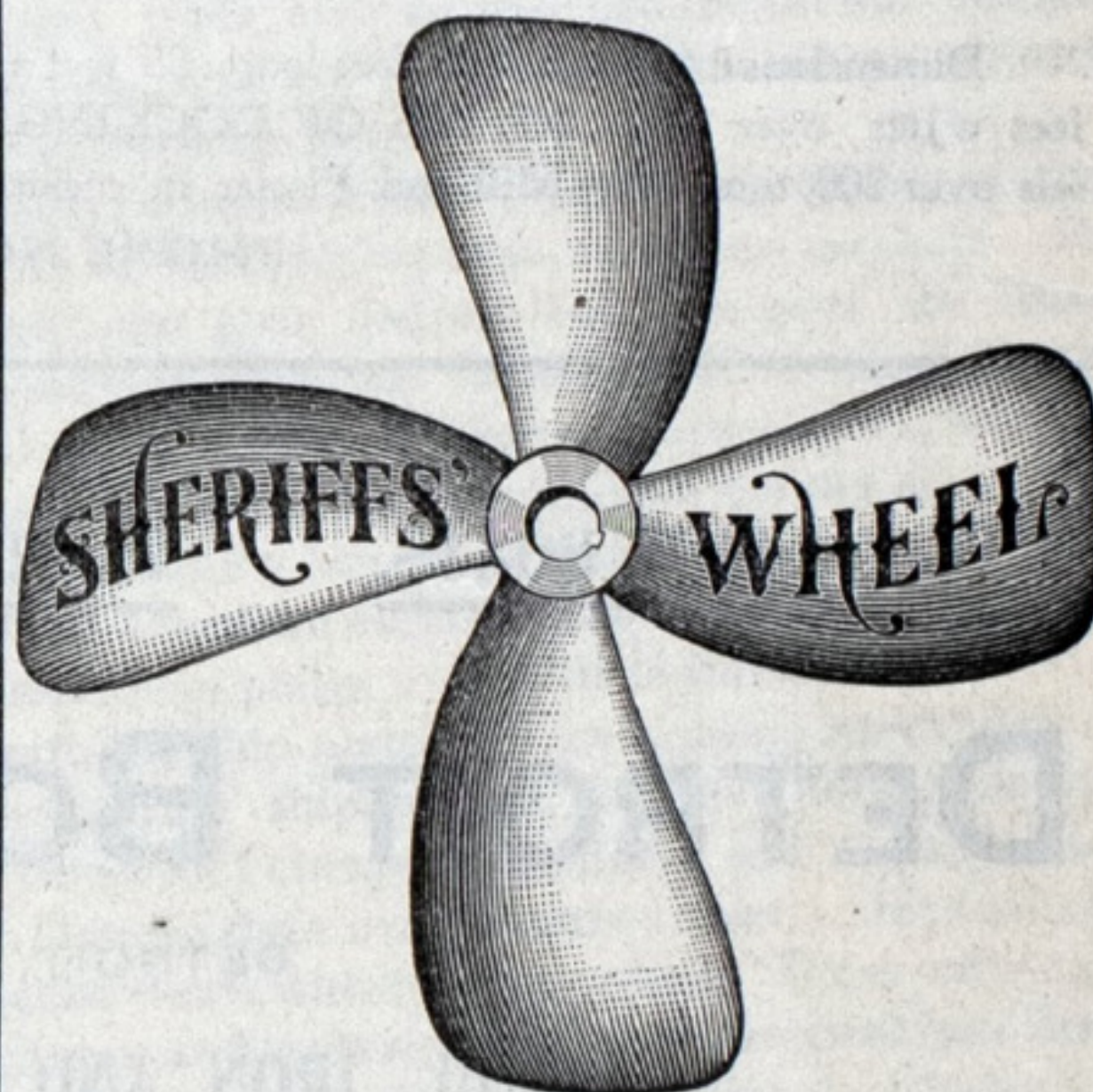
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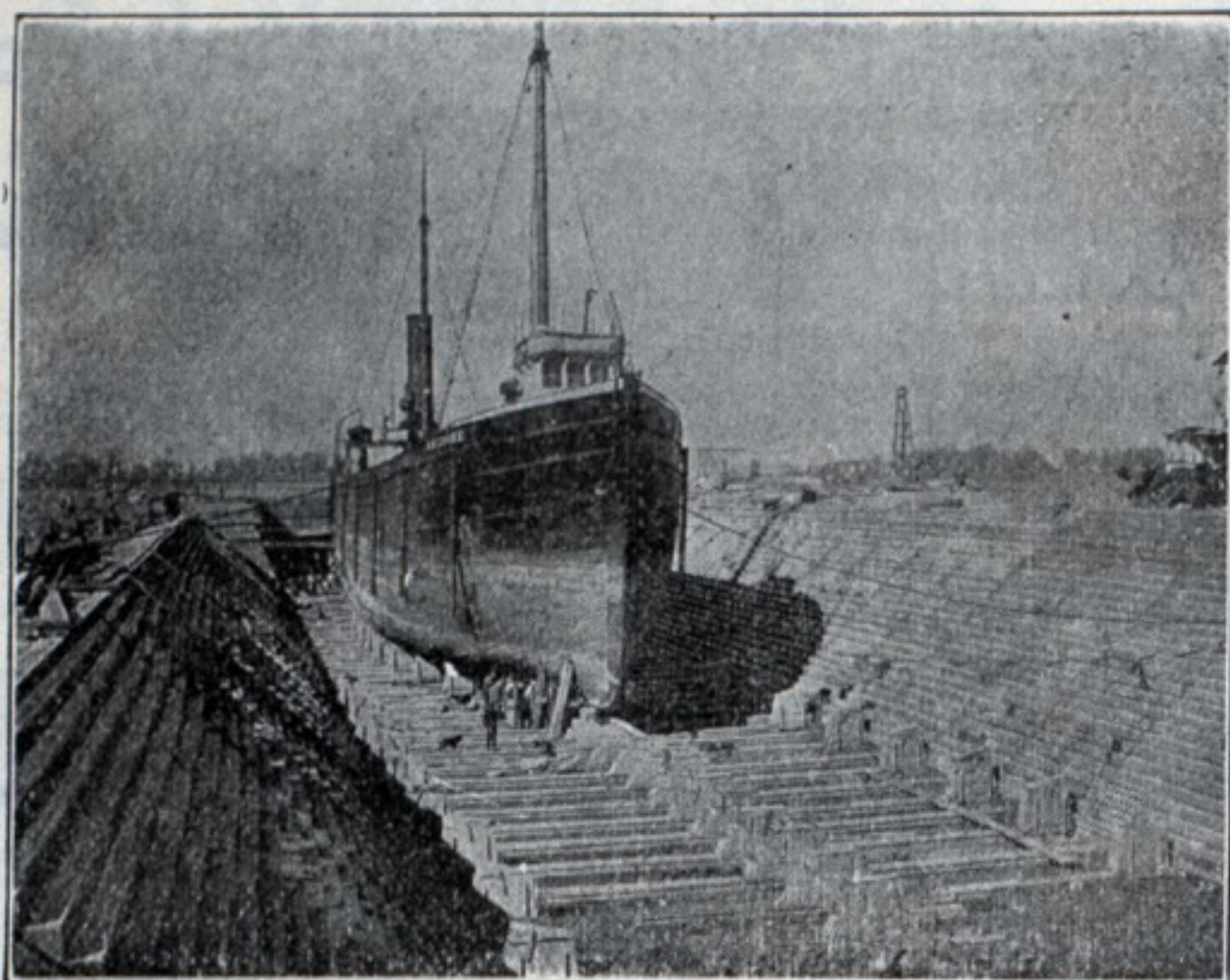
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New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

Repairs to Metal and Wooden Ships a Specialty.

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## A. Gilmore's Sons,

**Dry-Docking,  
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EAST SIDE, NEAR IRONVILLE, - - - TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill. RATES OF DOCKING, Ten Cents per registered gross ton for vessels over 200 tons. Jig Mill and Planer in connection with Dock.

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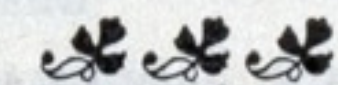
Write for Samples and Prices.

## American Steel Barge Co.

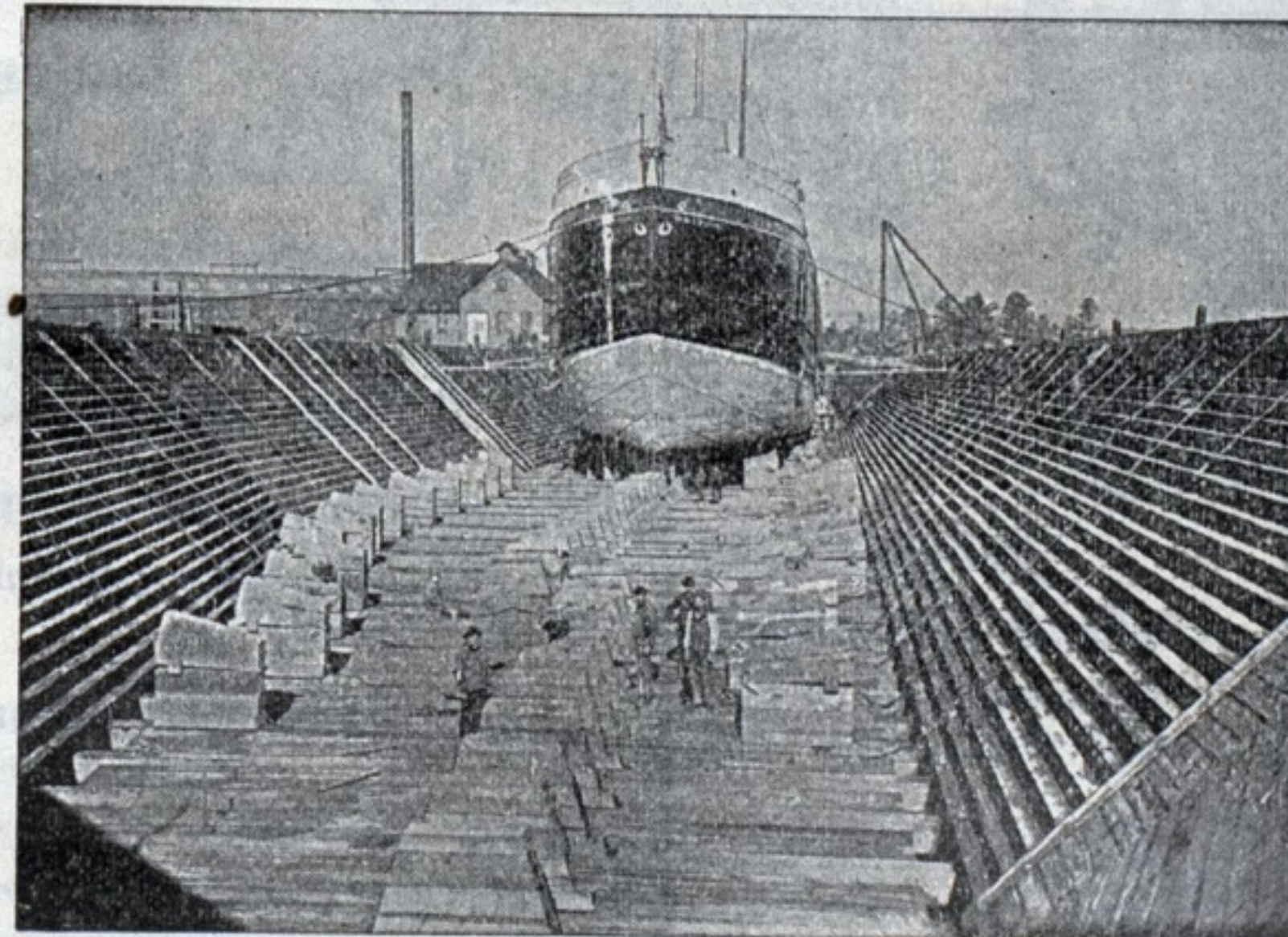
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PHOTOGRAPH OF 300-FOOT BOAT IN DOCK.



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Best Quality of Oak in Stock for Repairing Wooden Vessels of all Classes.



### SIZE OF DOCK

Length, Extreme.....	537 feet.	Entrance, Top.....	55 feet 9 in.
Breadth, Top.....	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 "	Depth over Sills.....	18 "

LARGEST DRY-DOCK ON THE LAKES.

Prices for Repairs and Docking same as at Lower Lake Ports.

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